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The Monthly Magazine For Sanyo MBC-550 and 555 Users

INSIGHT 550/555

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To Mastering MS-DOS

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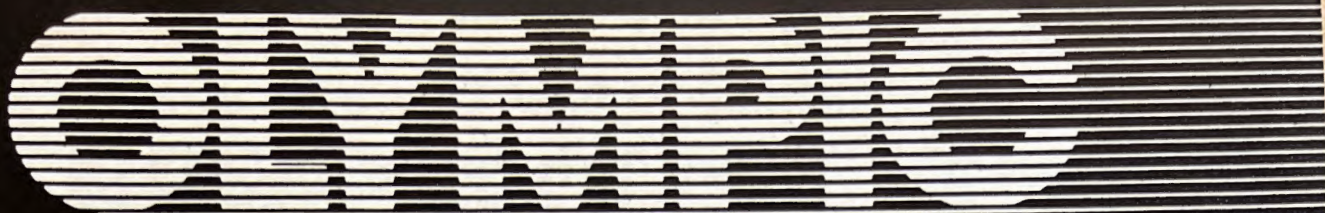
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The Monthly Magazine for
Sanyo MBC-550 and 555 Users

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Sanyo users get a NEW software deal . . .

NOW, Your Sanyo can Write Programs for You

Your computer is fantastically fast...once it knows what to do. You probably realize that a computer is the combination of hardware and software, working together smoothly, to give you what you want. Either one alone is useless. Software is really the key...the "mind" of a computer system. Every project or task you want to do requires a new specific software application to make your computer behave exactly the way you desire.

Of course you may be able to "force fit" your application into some existing canned package you have, but to really be flexible you need a separate program for your special purpose.

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LETTERS TO THE EDITOR

Letters To The Editor are always welcome. Please keep them short if possible and we will try to answer some of the questions in this column. Others may be left open for solutions by other users. In order to make space for as many letters as possible, we reserve the right to edit submissions. Letters can be sent to Soft Sector, P.O. Box 385, Prospect, KY 40059.

Editor:

Mr. Fred Blechman mentions in his article ["The Dialectic Difference," August '84] that there are two IBM BASIC statements "...that seem to have no value or purpose in S(ano) BASIC": *SCREEN* and *WIDTH*. He is absolutely correct concerning *SCREEN*, but the statement *WIDTH* has a definite purpose in my version of Sanyo BASIC (1.31). As per the *Sanyo BASIC Reference Manual*, Pages 3-141 and 3-142, "The *WIDTH* instruction determines the output width (number of characters per line) of the printer." If followed by a space and a numeric expression within the range of 30-255, it does exactly that, no matter what pitch (cpl) the printer is set for.

I would hope that Mr. Blechman notes this correction before the final draft of his forthcoming book on the Sanyo MBC-550 series is sent to the publisher.

Mr. Blechman has been writing useful, informative, and easy to understand articles since the early days of the Model I. Excepting the above-mentioned misunderstanding about the *WIDTH* command, "The Dialectic Difference" is just one more fine example of his contributions to the small computer field. Let us hope he continues to benefit Sanyo MBC-550/555 users in *SOFT SECTOR*.

E.R. Bailey
East Brady, PA

Editor's Note: In this case, Mr. Blechman is way ahead of you (or below, in this case). See the following letter.

Editor:

My *SOFT SECTOR* article, "The Dialectic Difference," is already in need of an update. The Sanyo MBC 550/555 continues to reveal more capabilities — and some additional restrictions.

Since writing the article several months ago, I've found a not-frequently used statement that can solve the problem of *PRINT#1* requiring delimiters when using more than one variable. The keyword is *WRITE*, used in the same manner as *PRINT*, but it inserts delimiters automatically. Line 110 of the sample program would be *110 WRITE#1, A,B,C,D*. This will work with the Sanyo 550/555 and the IBM PC.

While I have still found no application for the keyword *SCREEN* (and still recommend its removal from a Sanyo 550/555 program), *WIDTH* does have a purpose. For the Sanyo 550/555, it is strictly a command to the printer, and sets the point at which the computer issues a carriage return to the printer. The low limit is 30 and the high limit 255. For example, *WIDTH 45* will print text,

listings, etc., 45 characters wide. This has no effect on the Sanyo screen display. The default setting is 80.

That means, unless changed, your printer will be forced to the next line by the computer after 80 characters (of whatever size). This means that if you are using condensed characters, you must increase the *WIDTH* to get a full line on the printer!

For example, my CP80 Type 1 (Legend 800) printer allows 142 characters on a line in compressed mode, so I would use *WIDTH 142* from the keyboard or in a BASIC program if I were printing in that mode and wanted full-length lines.

There may be a problem using Compaq *BASICA* found on a Compaq DOS 2.0 disk, as stated in the article, with Sanyo MS-DOS 1.25. On further investigation, I find that the Compaq *BASICA* I used was Version 1.12 with my Sanyo MS-DOS 1.25. It may be that the 2.0 version of Compaq *BASICA* will work with Sanyo's MS-DOS 2.11. Sorry, but I cannot supply copies of Version 1.12 to readers.

If you can't get *BASICA* to work, remember that you can have a friend with an IBM PC simply *LOAD* the target BASIC program in his machine and *SAVE filename*, A on the IBM (single-sided, if you have single-sided Sanyo drives) and it should *LOAD* properly on the Sanyo 550/555. Be wary of different DOS versions, since MS-DOS 1.xx and MS-DOS 2.xx versions have various incompatibilities.

Fred Blechman
Canoga Park, CA

Editor:

I have been programming computers since 1968 and worked on the IBM 360s, Burroughs 5500s and PDP-10s, in both batch and time-sharing modes. The personal computer puts computing in the reach of the common man. I have worked with virtually all of the PCs available on the market and must say that the Sanyo MBC-550 series is in a class by itself. This computer should be a serious threat to the market share positions now held by IBM and Apple in the PC market. I am currently evaluating software and am writing software for the Sanyo and would welcome correspondence from Sanyo users (address: 20203 Kempsford Ct., 77450). I am particularly looking for a chess game for the MBC-550.

The *SOFT SECTOR* magazine should be a big success — the number of Sanyo users is growing exponentially. It is believed that 250,000 units will be sold in the continental

United States by the end of 1984. When you have a better mousetrap — and *SOFT SECTOR* supports this new mousetrap — you can both only be successful!

Frank L. Havel, P.E.
Katy, TX

Editor:

I own a Sanyo MBC-550. I'm a brand new computer user and my knowledge about programming could be put on the point of a pin. Please don't forget us beginners in your magazine. Not everyone who buys a computer is an experienced programmer. Put a section in your magazine for us beginners and all the beginners will thank you.

Myself, I read magazines I can understand. If I don't understand them or they're too hard, I leave them. When I get better, I'll get a harder-to-understand magazine.

I don't want you to think I'm complaining, but I'm for me, the beginner. It's easy to mix simple programming information with the hard.

I'll be looking forward to the success of your magazine — I'm tired of seeing magazines dealing with IBMs and Apples.

Richard F. Schmidt
Ashland, OH

Editor:

I just finished reading your premier issue cover to cover. It's great! I especially like the advertising.

I have ordered a disk drive upgrade kit from J&M Systems and have a question for Tim Purves: What can I do with my old 160K drives after I install my DSDD drives?

William VonSennet
Voncom, CO

Editor's Note: Your question, as well as all the other technical questions that we've received, have been given to Tim. You and all the others should be hearing from him soon and many of the most interesting questions will appear in his "Input/Output" column.

Editor:

As a new owner of a Sanyo MBC-550, I am enthusiastic about your magazine. After ordering a subscription I received your first issue promptly and I found it to be both interesting and educational.

Thomas O. Malerk
DeLand, FL

LETTERS

LETTERS

Editor:

Thank you for your recent magazine, **SOFT SECTOR**, the Monthly Magazine for Sanyo MBC-550 and 555 Users. I am the owner of a Sanyo MBC-1150 Creative Computer and not the 550 or 555.

Do you have a magazine or some monthly information on my machine? This I would be most interested in.

*Robert A. Wood
Wyandotte, MI*

Editor:

I have received your complimentary copy of **SOFT SECTOR** and was impressed. Unfortunately, I am an owner of a Sanyo 1150, which is an 8 bit CP/M machine.

I was, however, able to get some hints on the use of Sanyo BASIC, which I am sure will be effective on my machine as well since it uses Sanyo BASIC also.

I am wondering if you are planning to make your publication all inclusive and cover other Sanyo computers. There are a lot of us out here!

*Av Dafni
San Pedro, CA*

Editor's Note: Sorry, fellows, but we feel that the 550/555 deserves our full attention and intend to keep **SOFT SECTOR** system-specific. Like the subtitle says, "For Sanyo MBC-550 and 555 Users."

Editor:

I have just received **SOFT SECTOR** and it is an excellent magazine. It is outrageous, however, for you to charge Sanyo owners for it. Much of the material in this periodical should have come with the equipment. The rest of it is an update that a purchaser in the computer field should have and the company should supply. Considering the atrocious nature of the books that were supplied with the equipment, you should give **SOFT SECTOR** to your customers as a matter of atonement. Many people have bought computers that are gathering dust on a shelf because they could not overcome the hurdles that lie in the way of learning how to use it (I am not one of them).

I look forward to a change in your policy of charging customers for what is clearly a promotional house organ.

*Herbert Jaffe
Freeport, NY*

Editor's Note: We're glad you like **SOFT SECTOR**, Mr. Jaffe, but we must emphasize that we are an independent firm and unaffiliated with Sanyo Business Systems. **SOFT SECTOR** is by no means a Sanyo "promotional house organ." We understand that some Sanyo dealers may be graciously including **SOFT SECTOR** subscription cards with some of their new machines and some people connected with Sanyo may contribute articles in forthcoming issues — our relationship extends no further than that.

Editor:

We wanted to thank you and your staff for the fine magazine you have created for Sanyo PCs. We are new users of the 550 system and found the entire August issue of **SOFT SECTOR** an invaluable addition to our information files. We particularly enjoyed "FastLoan," "The Gambler" and "The Dialectic Difference." We are looking forward to the continuing "MS-DOSsies" to help us unlock more of the computer's abilities (especially how to edit in BASIC! The operating system manual that came with our machine is confusing!).

*Michael & Billie Ann Farley
Caldwell, ID*

Editor's Note: For an excellent enhancement to the **Craps** program featured in "The Gambler," see Page 46 in this issue.

Editor:

I have a suggestion for an article. I would like to see a discussion of how to program the computer in BASIC to use the RS-232C port. Sanyo provides almost no documentation in their manuals. I know there are software packages available for this, but I would like to write my own.

*Robert A. McNaught
Burlington, Ontario*

Continued on Page 31

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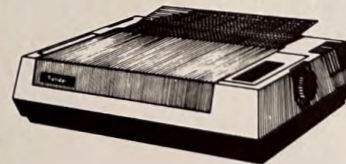
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BASIC TRAINING

FIRST OF A SERIES

(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is a self-taught electronics and computer BASIC programmer and specializes in writing for beginners.)

I'm assuming you have no experience in BASIC programming and want a "crash course" in the basics of BASIC as it is used on the 550/555. This article will cover some of the most common BASIC words, as well as familiarizing you with *SAVEing* and *LOADing* BASIC programs using the disk drive.

Before we go any further, I must explain that I use "keyword" and "token" to mean the same thing. The same is true of "disk" and "diskette." I also draw no particular distinction between the words "function," "command" and "statement" — although purists have long-winded definitions to define their differences. I'll use these words freely to avoid the awkwardness of being overly specific.

Programming

A program is just a sequence of instructions to the computer, expressed in a manner the computer can understand. Actually, deep inside the Sanyo, all instructions end up being fed to the microprocessor as a sequence of voltage on/voltage off pulses, usually called "ones and zeros" or "binary code." Your Sanyo contains additional circuitry and "firmware" (integrated circuit chips) that do the translation for you, together with the Sanyo BASIC program supplied on the MS-DOS disk furnished with your Sanyo.

Editor's Note: This series is based on material from a forthcoming book by the author, Sanyo MBC-550/555 Beginner/Intermediate Guide, soon to be published by Holt, Rinehart and Winston, a division of CBS College Publishing. Copyright © 1984 by Fred Blechman.

Sanyo BASIC

When you type BASIC from the 'A:' prompt in MS-DOS, you are telling the computer to load the Sanyo BASIC program from your MS-DOS diskette into the computer's RAM (random access memory). Once you've done that and you have the BASIC "Ready" prompt on the screen, you can communicate with the computer through the BASIC "interpreter." This is very much like a spoken language translator, but with more specific demands. You must "speak" to BASIC with only the "reserved" words (keywords or tokens) and explicit "syntax" (roughly equivalent to proper grammar in a spoken language).

Line Numbers

A BASIC program is sequenced by "line numbers" in ascending order. You can type in an instruction with any line number from 1 to 65535 and it will automatically locate itself in the program (actually, in the computer's memory) in the proper location. Some computers allow Line 0, but Sanyo BASIC does not. Also, some BASICs only allow line numbers up to 9999, while the Sanyo accepts any line number up to 65535. A line number above 65535 results in an "Overflow" error when you press the ENTER (left-down arrow) key to put it in the program.

Sanyo BASIC allows program lines to contain "multiple statements" — that is, they can have more than one instruction on a line. You tell the computer that another instruction follows by using a colon (:) before the next statement on that line.

You may have noticed that in most magazines and books, program "listings" have line numbers that increment by 10. This is not a requirement, but

Fred Blechman

Soft Sector Contributing Editor

leaves room for the programmer to add other lines in-between if they become necessary as the program is developed. Sanyo BASIC provides the convenience of the *RENUM* command that allows the program, once it's completed and tested, to be neatly renumbered. Sanyo BASIC also provides a full-screen editor that makes it easy to renumber individual lines in a program.

Getting A Program In Memory

There are three ways to put a program into the Sanyo's memory — directly from the keyboard, using a storage device, or connecting the Sanyo through a communication interface.

Think of how tedious it would be to have to type in a program every time you wanted to use it. Therefore, the keyboard is generally used for entry of "data" during the *RUNning* of a program, or for entering the original program the first time.

Programs are generally *SAVED* on either a tape or disk device. Typical microcomputer tape storage is neither as fast or efficient as disk storage and is not supported by Sanyo computers. "Floppy disk" drives, used with common, inexpensive and easily obtained "diskettes," are the storage medium used on the 550/555, although a more sophisticated (and expensive) "hard disk" system can be added for those needing very high integrated storage capacity.

A more complex means of entering a program into your computer is to transfer it from another computer. This requires an RS-232C communication board, available as an option from Sanyo or independent suppliers. Using this board, together with a "terminal program," and either directly wiring your computer to another, or by using a

"modem" and the telephone lines, you "download" a program from the other computer to your Sanyo. You can also "upload" a program to the other computer from your Sanyo. This takes special equipment and techniques not covered in this article.

Loading Sanyo BASIC

It's time to turn on your Sanyo. I'm assuming you have a single-drive 550. If you have a two-drive 555, use only the right-hand Drive A throughout this article.

Turning On

Press the power switch on the front. The red disk drive light comes on and, if your monitor is turned on and plugged into the back of the Sanyo, it will also be powered. Next, slip the MS-DOS disk supplied with the computer into Drive A (label up) and flip the drive lever down. This will load the MS-DOS disk program into computer memory in just a few seconds and is called "booting up." Although it will not usually cause a problem to turn the computer on and off with a diskette in the drive, it's considered better practice to "power-up" and "power-down" with the diskette removed from the drive.

Date and Time

The monitor should display the MS-DOS sign-on and ask for the date. Type in the date in "mm/dd/yy" format (month, day, year), using either hyphens (-) or slash marks (/) as shown, and then press the ENTER key. When the time is asked for, use an "hh:mm" format (hour, minute) with a colon (:) between them, and press ENTER. If preferred, both the date and time can be bypassed by pressing ENTER twice.

Passing Through MS-DOS

The 'A:' MS-DOS prompt now appears. It is very important that you realize that when the computer is in the MS-DOS mode, the screen prompt is 'A:' (or sometimes 'B:' if you have two drives). The computer interprets keyboard commands for MS-DOS only when in that mode, and will not understand BASIC keywords.

We won't dwell on MS-DOS here except to point out that it is entirely different from BASIC. Our objective, at this point, is to pass through MS-DOS as a gateway into Sanyo BASIC.

With the 'A:' followed by a small flashing cursor, type *BASIC* and press ENTER. You have just instructed the computer to look for the program called *BASIC* (actually, *BASIC.EXE*) on the disk, and load it into memory. It does exactly that, and you'll hear some quiet clicking for the two or three seconds it takes to put the BASIC program into memory from the disk.

The screen clears, you see the BASIC sign-on message, and the Ready prompt appears with a "greater than" symbol below it followed by a flashing cursor. That's the BASIC prompt. Anytime you see that prompt, you know you're in BASIC!

LISTing And DELETEing

Type *LOAD"DEMO"* (lowercase letters are okay) and press ENTER. This is a fairly long program and takes about seven seconds to *LOAD*, after which the Ready prompt appears. Now type *LIST* (or push key PF3 on the left side of the keyboard) and press ENTER. The program will start *LISTing* on the screen.

LIST Interrupt

After about ten lines have *LISTed* on

the screen, press the Space Bar — the long bar at the bottom of the keyboard — and the *LISTing* will stop at the end of a line and the flashing cursor will move to the extreme left on the next screen line. By alternately pressing the Space Bar, you can start and stop the program. Actually, you can press almost any key to resume *LISTing*, but only the Space Bar will temporarily interrupt the *LISTing*. If you press the red BREAK key, you'll hear a beep and the screen will show a Ready prompt.

Don't try to understand the program. We'll just use it to practice *LISTing* and *DELETEing* program lines.

LISTing Specific Lines

You may wish to *LIST* only part of a program. This is done by specifying the "range" after the keyword *LIST* (followed by a space). For example, if you wanted to *LIST* all the lines from 1000 to 1070 (inclusive), you would use *LIST 1000-1070* as the command at the Ready prompt. If you wanted only the lines up to and including 1000, the command would be *LIST -1000*. If you wanted only the lines from 2000 to the end of the program, you would use *LIST 2000-* as the command. The hyphen is required in all cases where you specify a range, and you must always have a blank space after the word *LIST* if you type anything following it. Of course, you must always press ENTER to process the command, and the word *LIST* without anything following will output the entire *LISTing* to the screen.

DELETEing Program Lines

There are times when you wish to remove one or more lines from a program. To remove a single line, just type the line number and press ENTER. This, in effect, replaces the line with nothing, thus deleting it from the program.

To remove a group of lines, use the keyword *DELETE*, followed by a blank space, and the specific line numbers you want *DELETED*, separated by a hyphen. For example, *DELETE 1000-1060* will kill line numbers 1000, 1060 and all lines between them. *DELETE -2000* will remove all program lines from the beginning up to (and including) Line 2000. *DELETE 6000-* will eliminate all lines starting at Line 6000 to the end of the program.

To remove the entire program from memory, type *NEW* and press ENTER. This doesn't actually remove the program from memory, but moves "pointer" values so that BASIC treats the program as if it had been completely erased.

PRINT and CLS

Probably the most commonly used BASIC keyword is *PRINT*. Using and formatting *PRINT* with other commands and punctuation marks was covered in detail in a previous article, so it will not be repeated here. Review that now if you need to.

Clearing the Screen

The *CLS* command clears the screen. This is generally a good habit to get into, since it prevents confusion with screen residue. You can clear the screen in several ways, but the easiest (when in BASIC) is to just press the PF1 key. This is programmed to clear the screen with just one stroke — you don't even need to press ENTER!

Another way to clear the screen is to use the *CLS* command, either directly from the keyboard (followed by pressing ENTER) or within a program.

Printer Commands

If you have a printer connected to the parallel interface of your Sanyo, there are two more commands available that relate to *LISTing* and *PRINTing*. *LLIST* and *LPRINT* will direct *LISTing* and *PRINTing* to your printer instead of the screen. Be very careful with these commands, however, since if the printer is not on and ready, your computer will "freeze" (keyboard will not respond) while the computer keeps looking for a "go-ahead" from the printer. The only recovery is to "reboot" with the Reset button (left side of keyboard near the rear) — and this will cause you to lose your entire program! For this reason, it's a good idea to always have a printer connected to your 550/555 — just in case you type *LLIST* instead of *LIST*.

Once the program is printing with *LLIST* or *LPRINT*, you can hit BREAK to stop it. Generally speaking, the BREAK key will interrupt most BASIC programs or printouts.

If you want *PRINT* on both screen and printer, you'll need to repeat the *PRINT* program line with another *LPRINT* program line. Unfortunately, the Sanyo 550/555 does not have a BASIC "screen dump" command, as is available on some other computers. (PrtSc and up-arrow keys used together on the IBM-PC, for example, provide a screen dump to the printer. On Timex Sinclair computers, COPY is used.)

Commas and semicolons, when used for print formatting, act the same way on the printer and the screen. *LPRINT TAB* is also valid, but *LOCATE* is

completely ignored by the printer. Therefore, it may be difficult or impossible to exactly duplicate screen displays on the printer without a special screen dump utility program.

WIDTH(number) is a command to control the number of characters printed on a single printer line. For example, if you only want 40 characters on a line, specify *WIDTH(40)* either directly from the keyboard or within a program. The minimum allowed is 30 characters, the maximum is 255. This can be handy to format text or *LISTings* to a specified column width to paste up for reproduction. The default, if not otherwise specified, is 80 characters on a line.

Using Variables

The whole concept of variables is confusing to many people. You merely tell the computer you are going to assign a value to a "variable name" that is composed of one or more letters (or combinations of letters and numbers). From that point on, the computer uses this variable name to keep the value in

BASIC TRAINING

memory.

Sanyo BASIC allows you to use any alphanumeric sequence (beginning with an alphabetic character) up to 16 characters long. Anything beyond 16 characters will be accepted, but ignored, and you cannot use any "reserved words" (BASIC keywords) as variables.

Many programmers prefer to use lengthy variable words. I tend to use just single letters, since they use less memory and require less typing. The computer doesn't care.

Numeric Variables

A variable that represents a number is called, not surprisingly, a "numeric variable" or "simple variable." Later in this series we'll discuss the differences between integer, single-precision and double-precision numbers. At this point, all you need be aware of is that, unless otherwise defined, a numeric variable is held in memory as a single-precision, seven-digit number and displayed in six digits.

Variables that hold one or more alphanumeric characters in memory are called "string variables," and are dealt with later in this series.

Some computers require the word *LET* before setting a variable to a value,



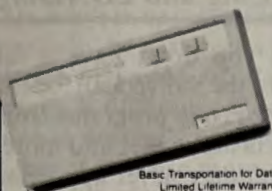
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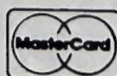
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such as *LET X=5*. Sanyo BASIC allows the *LET*, but does not require it.

Simple Variables

To illustrate how a simple variable holds an assigned value in memory, type and ENTER Listing 1. When *RUN*, it will produce a typical output as shown in Figure 1.

Line 100 of Listing 1 identifies the variables just for reference. The *REM* at the beginning of the line stands for "remarks," and is BASIC's way of allowing you to put notations in a listing without the computer caring what or how you express it. You may use the apostrophe (') in place of *REM*. Programmers normally use *REM* statements to remind them — and program users — of what is coming next in the program. The computer ignores *REM* statements.

Line 110 clears the screen and establishes the starting value of the variable *R* as equal to one. Sanyo BASIC sets all variable values to zero when *RUN* is used, so it is necessary to establish a starting value in the program for any variable you want to be "initialized" at a value other than zero.

Entering A Number

Line 120 allows you to type any number (from one to 62 is allowed; zero will produce an error) when prompted, and this value is assigned to variable *C*. Line 130 checks to see that the value has not exceeded 62, using a very simple "error trap" routine. This line tells the computer, "If the value just entered for *C* is greater than 62, then go back to program Line 120." Why 62? Because the line printed on the screen by program Line 150 would extend beyond the right side of the screen and would "wrap around" to the next line, making the display messy.

Screen Erasure

Line 140 positions the cursor at the beginning of the current screen line and *PRINTs* 22 blank spaces to "erase" the prompt (and your entry) from the screen. Line 150 then positions the cursor on the same screen line, but moves *C* spaces

along the line, and starts *PRINTing* at that point. Notice that the *C* within the quotation marks prints as the letter 'C', but at the end of the statement, where *C* is used as a variable, the latest numerical value of *C* is printed.

Line 160 advances the value of the variable *R* by one, so the next time the *LOCATE* statement is used, *PRINTing* will be on the next line. The program then branches back to Line 120 for another *INPUT*.

RUNning the Program

When you've entered the program from the keyboard, type *RUN* and press ENTER (or just press the PF4 key). Type any number from one to 62 (and press ENTER) each time the prompt appears and you'll see the effect. Every time you make a new entry, the value of the variable is changed. It is, indeed, "variable," but only changes on command. To see the value of any variable at any time the Ready prompt is active, type "?variable name" (without the quotes) and press ENTER. The ? is the same as *PRINT* to the BASIC interpreter when it is used outside of quote marks. The value of the variable will be *PRINTed*. Try this by *RUNning* this program, hitting BREAK anytime, then typing ?*C* (and ENTER) to see the last value for *C*. You can then type *CONT* and press ENTER to *CONTinue RUNning* the program.

Printer Output

This program will not *LPRINT* properly because of the *LOCATE* statements. Listing 2 shows how it may be revised to produce the printout of Figure 1 by just typing *RUN*. The *READ* and *DATA* statements will be covered later in this series. The *R=1* and *R=R+1* in Lines 120 and 160 are unnecessary in this version of the program, but do no harm. The *END* in Line 130 *ENDs* the program gracefully when the value of *C* equals 100 — the last item of *DATA*.

A Happy Face

Another example of a program using variables and *LOCATE* is shown in Listing 3. The *CHR\$(2)* used in pro-

gram Line 50 is a "Happy Face" character, which you can place anywhere on the screen. Puzzled by the *A\$* in Lines 50 and 60? More on that when we discuss strings later in this series.

SAVEing and LOADing

Be glad you don't have a cassette interface for the Sanyo 550/555! *SAVEing* and *LOADing* programs from disk is so much faster, easier and more reliable that you may never appreciate it if you haven't struggled with cassettes.

SAVEing a Program

You've just typed in Listing 1, 2 or 3. Rather than having to type it in again at another time, you can *SAVE* it on a disk. We'll assume you have the *MS-DOS* disk in the right-hand drive. Make sure it does not have a "protect tab" over the notch near the upper right corner of the disk jacket.

Type *SAVE"VARIABLE"* (or any name you like, up to eight characters) and press ENTER. That's all there is to it. The disk drive will start and a few seconds later the Ready prompt will come back on the screen. It couldn't be much easier. BASIC will automatically add a *.BAS* "extension" to the filename you assign the program.

You do have the option of protecting the files with a *.Q* after the filename. Don't do it unless you really know how to handle protected files. You are likely to protect them from yourself!

Also, you can use a *.A* (such as *SAVE "filename",A*) after the filename to save the program as an ASCII file for transfer to another computer or to read into a word processor for editing. For now, you are best off keeping things simple — no *A* or *Q* needed.

SAVEing a program will automatically overwrite an existing program on that disk with the same filename, so be careful!

Filename Rules

You can be very creative with the "filename" used after the keyword *SAVE*, except that you must not use

Listing 1: Numeric Variable

```
100 REM * LET R=ROW AND C=COLUMN *
110 CLS:R=1
120 INPUT"Column? (62 max.)";C
130 IF C>62 THEN GOTO 120
140 LOCATE R,1:PRINT"
150 LOCATE R,C:PRINT"C has a value of";C
160 R=R+1:GOTO 120
```

Listing 3: "Happy Face"

```
10 CLS: REM * USING LOCATE *
20 INPUT"How many spaces down (1-25)";Y
30 INPUT"How many spaces over (1-80)";X
40 LOCATE Y,X:PRINT CHR$(2)
50 LOCATE 4,1:INPUT"Again (y/n)";A$
60 IF A$="y" OR A$="Y" THEN CLS:GOTO 20
```


more than eight characters. The filename must start with a letter or '\$', and can contain most punctuation marks except the period (.), semicolon (;), colon (:) or asterisk (*).

There's a lot more to filenames than you need to know at this point. For example, while in BASIC, a filename will automatically be assigned a dot and a three-letter extension of *BAS*, unless you specify a different extension. The extension is normally not important in BASIC, but if you use more than eight characters in the filename, you'll have to specify the extension to *LOAD* or *KILL* this file.

File Directory

To see what filenames are on your disk when in BASIC, type *FILES* and press ENTER, or just press the PF5 key. You'll see a display similar to Figure 2.

To have this list go to the printer instead of the screen, use *LFILES*. You'll see all the "visible" files on the disk with their three-letter extension names. There may also be some "hid-

den" files. The *.BAS* extension stands for BASIC program files, while *.COM*, *.EXE*, *.BAT* and *.BAK* are MS-DOS file extensions. Other extensions, such as *.DAT*, or arbitrary three-letter codes, are usually assigned by the user.

LOADing a File

Once you've *SAVED* a file, you should be able to *LOAD* it back into memory just as easily. Press PF5 and look at the filenames on the disk. Pick one that has a *.BAS* extension. Then type *LOAD "filename"* and press ENTER. The disk drive will start up and *LOAD* the program in seconds, depending on its length. *LOADing* a program deletes and replaces any BASIC program in memory. Once the Ready prompt pops up on the screen, you can *LIST* or *RUN* the program.

If the program you want has been *SAVED* with an extension other than *.BAS*, you'll have to add that to the command, such as *LOAD "filename.ext"*, using the extension letters shown in the *FILES* directory.

MERGEing Programs

Using the command *MERGE* instead of *LOAD*, followed by the filename (and extension, if necessary), preserves the BASIC program in memory and literally *MERGEs* the two. If the resident program has line numbers the same as the *MERGE* program, they will be replaced! Properly used, the *MERGE* program should have all its line numbers higher than the resident program. *MERGE* is normally used to add standard subroutines to an existing program.

KILLing a File

The command *KILL "filename.ext"* does just what it says — it *KILLS* the specified file. It doesn't actually erase the file from the disk, but removes it from the disk directory, which accomplishes the same thing.

Coming Up

The next article in this series will discuss loops, subroutines, branching, and using your \$1,000 Sanyo MBC to replace a \$10 digital timer.

Figure 1: Using A Variable

```

C has a value of 10
  C has a value of 15
    C has a value of 20
      C has a value of 25
        C has a value of 30
          C has a value of 35
            C has a value of 40
              C has a value of 45
                C has a value of 50
                  C has a value of 55
                    C has a value of 60
                      C has a value of 55
                        C has a value of 50
                          C has a value of 45
                            C has a value of 40
                              C has a value of 35
                                C has a value of 30
                                  C has a value of 25
                                    C has a value of 20
                                      C has a value of 15
                                        C has a value of 10

```

Figure 2: Disk Files

SCOPY	.EXE	P-S	.COM	VARIABLE.BAS	PRINT	.TST	FILECOPY.EXE
TEST	.BAK	DATA	.DAT	PALETTE.BAS	TEST	.BAS	COLORSPR.BAS
RS232TST.BAS		SINEWAVE.BAS		PRTUSING.BAS	CHARSET	.BAS	CSRLIN .BAS
JOYSTICK.BAS		LOCATE	.BAS				

Listing 2: LPRINT of Figure 1

```

100 REM * LET R=ROW AND C=COLUMN *
110 CLS:R=1
120 READ C
130 IF C=100 THEN END
150 LPRINT TAB(C);"C has a value of";C
160 R=R+1:GOTO 120
170 DATA 10,15,20,25,30,35,40,45,50,55,60,55,50,45,40,35,30,25,20,15,10,100.

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Upgrading Your MBC-550/555 To Double-Sided Drives

By Jessie Bunch

Although the Sanyo MBC-550 and 555 are shipped with single-sided disk drives, installing double-sided drives is a simple task and gives you much more storage space to work with. This article tells how to accomplish the task using two TEAC 55B drive units. To take advantage of the double-sided drives' extra capacity, you will need either a patch for MS-DOS 1.25 to convert to double-sided operation (such as DS-DOS) or a version of MS-DOS 2, which was designed from the beginning for double-sided drives. (Sanyo now supplies MS-DOS 2.11, but only if you buy the double-sided drives from them.)

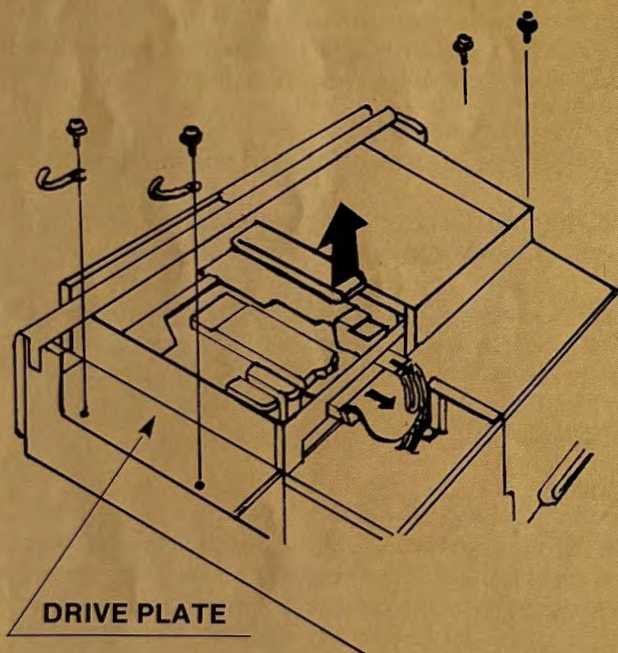
- 1) Make one of your new TEAC 55B drives into a 'B' drive.
 - a) Remove one of the TEAC 55B drives from its cardboard box and from the black plastic bag that it's in.
 - b) Hold the 55B in your hand on its back (i.e., the big round turntable motor flywheel plate facing upwards) with the front of the drive (where you put the diskettes) away from you.
 - c) In the lower left-hand corner of the drive, you'll find the white plastic power socket. To the immediate right and just above that socket, you'll find a row of seven pairs of labeled pins. Locate the set of pins labeled "DS0." It has a small plastic cover called a "jumper" over it. Gently pull this jumper off, insert it over the pair of pins labeled "DS1" and push it all the way down.

2) Removing the terminating resistor.

- a) When to remove the terminating resistor: If you are going to be using more than two drives on the same drive cable, you should remove the terminating resistor from each drive *except* the last one on the cable. The last one on the cable is the one farthest from the end connected to the computer. Some people recommend that the terminating resistor be removed from the first drive in a series of two. We usually only do it when three or more drives are used and have experienced no difficulties. If you have only two drives and want to remove the terminating resistor, remove it from the 'B' drive.
- b) Locating the terminating resistor: If you want to remove a terminating resistor, you will find it to the immediate right of the seven pairs of pins you found to make one of your drives into a 'B' drive. The resistor is in a socket labeled "RA1" on the board. The top of the resistor will say "1AM" on one line and "E3317" on the next. The text on the top of the resistor will appear upside down when holding the drive as described in 1c.

(Jessie Bunch is president of Apollo Optics and Kinematics, Inc., parent firm of A-OK Computers. He holds a number of patents in a variety of scientific areas, and has 10 years experience in the computer field.)

- c) Removal of the terminating resistor: Use a small screwdriver to pry one end of it up about $\frac{1}{4}$ inch from the socket. Then pry the other end up about the same amount. It will then be fairly easy to remove the resistor with your fingers. Put the resistor in a glass or plastic bottle. Seal the bottle and label it for future reference. You may want it should you ever want to reconfigure your system.
- 3) Remove the drive assembly from your Sanyo.
- Remove the cabinet cover by following the directions on Page 6-3 of your *Sanyo Users Guide*.
 - Disconnect the two cables on the back of each drive in the computer.
 - Remove the screws holding the drive support plate. Slide the plate, with the drives attached, away from the front of the computer and up. Refer to the illustration below.

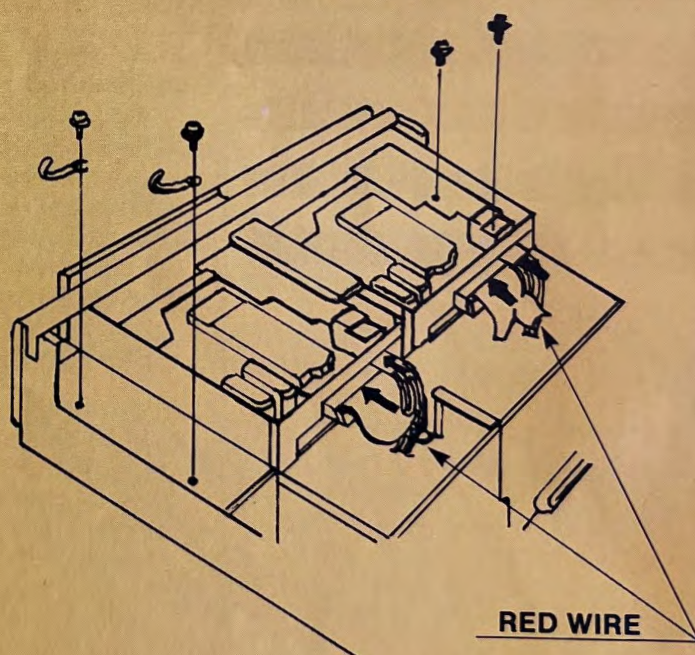


securing the diskette holder to the plate. Put these screws in the holes in the diskette holder they came out of. Do *not* attempt to use these screws to install a drive.

If you have two drives on the plate, remove the four screws securing the drive on your right. Place that drive in the black plastic bag that your 55B came out of and put that all in the cardboard box. Label it "USED TEAC 54A," unless it has never been used.

- Align the threaded holes in your new TEAC 55B drive (the one you made into a 'B' drive) with the holes in the drive plate using the present 'A' drive to determine the proper orientation. Screw the plate to the drive using the screws supplied.
- Install the new 'A' drive. Remove the 'A' drive and install the other TEAC 55B. There is no need to move any jumpers on this drive.

- Replace the drive plate with the two new drives into the cabinet. Align the screw holes and tighten the screws.
- Insert the power and signal line plugs into the drives.
 - Refer to the drawing below.
 - The power plugs (4 wires only — 1 yellow, 2 black, and 1 red) can only be inserted the correct way. If you have trouble pushing the plug in, turn it over and try again.
 - The signal line plugs are the large black ones. They have only one red wire. That red wire should be oriented in the same way as the red wire on the power plugs. If you are looking from the back of the computer, the red wires will all be to the right. The wire bundle will emerge from the plug toward the bottom of the computer.
 - NOTE! The plug may have difficulty reaching the new drives. If so, you may need to remove the plastic tie holding the wire bundle together. If you must do this, do it very carefully. You must *not* cut any of the wires. To cut the tie, do not do it directly. The safest way is to snip its head in two using end-cutting pliers.



- Install the new 'B' drive.
 - Place the drive assembly plate facing on its back (the drives underneath) with the drive openings facing you.
 - Prepare the 'B' location for the new drive.

If you have only one drive on the plate, remove the four screws



- Check to make sure you did not loosen anything while you were installing the drive.
- Replace the cabinet cover.
- Restore power to the computer.

LABEL MAKER

By Claire Gelinas

Here's a
simple
BASIC
program
that will
get your
mailing
labels
rolling!

(Claire Gelinas has a master's degree in education. In 1978, she founded her own software company and now specializes in computer assisted instruction [CAI] for the slow learner and for the handicapped.)

When my husband saw me typing this program last summer for my students in BASIC language computer programming, he said, "Have you gone back to teaching in kindergarten?" He felt the program was too simple.

When he tried to type it himself, he cursed under his breath and cried out, "It doesn't work! What's the matter?" That was his way of telling me that, even though he knew quite a bit about BASIC programming, he still had to practice the details that make a program work well.

Labels is simple enough to give a beginning BASIC programmer the encouragement to start a practical application. It is challenging enough to force an experienced programmer into concentrating on the difference between a period, a comma, or a semicolon. These tiny differences can mess up a BASIC program. It's important to stress the basics.

When correctly typed, *Labels* will produce mailing labels that are perfectly framed on inexpensive labels — the kind that come in rolls of 250 and have four lines on each label with no wasted lines between them.

In addition, this program can produce a listing of everyone who has a label. All you have to do is use regular paper and follow the same directions.

Some of my students have modified it to produce envelopes, but let's save that for later. All you have to do is add a few lines for the return address in the upper-left corner and then add tabs so the mailing address appears in the center of the envelope a few lines down.

Labels forces you to be accurate. If you don't pay attention to the screen and the logic of the program, you will find yourself flunking a program that is very easy to type. For example, in the *DATA* statements, you must pay special attention to the commas. Next, you must pay attention to two different orders: the order in which the *READ* statements recognize the *DATA* statements, and the order in which the *PRINT* and *LPRINT* statements reproduce the *DATA* statements on the screen and the printer.

This program forces you to adapt to circumstances. If you don't have a printer, you must delete, change, or bypass the *LPRINT* statements. For example, when you delete certain lines, you must examine the effect this will have on other parts of the program. This is true even when you change the lines temporarily by inserting *REM* between the line numbers and the first word in each command. When you bypass certain lines, you must still plan ahead to what you want on the screen.

Labels will force you to use white space in an attempt to make your screens more readable. You will notice that all we use is the *PRINT* command. Later on, you will learn a few other tricks of the trade. There is no need to get carried away by things that only a few will understand the first time around.

This program will force you to add documentation to the screen to help the reader who is looking at your masterpiece for the first time. Later, you will learn how to avoid this repetition.

After you turn on your machine and are in DOS, type *DIR* to get a directory of your diskette. Then, type *CHKDSK* to find out how much room you have left on the diskette.

If you are like most of my beginning students, you will soon realize that all you have done is examine Drive A. Place your blank diskette in Drive B. Type *DIR B:* for a look at the directory or catalog. Type *CHKDSK B:* to find out how much room is left on the diskette in Drive B.

Then, type in *BASIC* to call up the programming language you will need.

Next, type *CLS* to clear the screen. Type is a lot of garbage so you can practice a quicker way. Push down on PF1 and watch the same thing happen much more quickly.

Type *NEW* to clear the computer memory of any program that you don't want. This is dangerous if you haven't saved any program that you want. Once you type *NEW*, the memory is cleared. Any program you didn't save is gone forever unless, of course, you retype it.

Type *LIST* to see if anything is in memory. Try out PF1 again to clear the screen. Then, press PF3 to call up *LIST* with only one keystroke. Practice this until you have got it down to a system that saves time and effort. If you want to learn another way to get *LIST*, experiment with SHIFT, CTRL, and 'L'. This also produces the word *LIST* in BASIC. All you have to do now is push ENTER.

All you have to do now is push ENTER.

Type in *AUTO* for automatic line numbering. Explore this with a few lines of typing and ENTER each line. Then try the PF keys for *LIST* and *CLS*. Type *NEW* to erase unwanted lines of what you just typed. Then, make sure it is all gone by using the PF key for *LIST*. If you can't remember which PF key it is, this is a good time to start making notes. These notes will come in handy later when you misplace this article. For the time being, these notes will help you organize what you are learning.

Before you begin keystroking, press PF6. This requires the use of SHIFT and the PF6 key. After KEY LIST appears on the screen, press ENTER. This will cause the screen to print exactly what secrets are hidden in each PF key. This is something we expect you to practice and learn.

In DOS, you used *DIR* to examine the contents of each diskette. In BASIC, *DIR* won't do much. In BASIC, you must use PF5 which gives *FILES*. The *FILES* causes the computer to catalog the diskette in Drive A. The "?" at the end of the word *FILES* causes immediate execution of the command; in other words, it pushed the ENTER key for you.

The trouble is that you get nothing when you type in for yourself *FILES A:* or *FILES B:* which you might expect would work. The reason is simple. In BASIC, every reference to a file must be in quotation marks. For example, *FILES "B:"* will work while *FILES B:* won't work at all. If you want to catalog Drive A, you can type in either *FILES "A:"* or *FILES*.

Before you try keystroking a long program, be sure you master these details. If you don't, you will find yourself erasing files and even diskette directories.

Those of you who are experimental will find out that the closing quotation mark is not as important as the opening one. *FILES "A:* will work as well as *FILES "A:"* in calling up the catalog of the diskette in Drive A. If you use small letters, you may not find as much success as a steady diet of all caps in saving files and in loading files. Remember that PF7 will *SAVE* your file and that PF8 will *LOAD* it.

This can become tricky. To *SAVE* your file, push PF7 which produces *SAVE* and then type in *LABELS*. If you have run your program, you will notice Line 100. This line assigns the value *LABELS* to PF12. There is no PF12 key on the Sanyo 555, so you must push CTRL and '2' to get PF12.

You are now ready for a sure way of avoiding any misspelling of *LABELS* such as *LADELS*, *LABLES*, *LALBES*, or some other keystroke errors. Push PF7 to get the command *SAVE* and then push CTRL and '2' to get *LABELS*. Press ENTER and your program is saved with the correct spelling of its name you placed in Line 100.

Line Description

Line 100: This line places the name of your program in PF12 and gives you insurance that you will save it under the correct name each time you back up your keystroking. If you don't back up your program on two different diskettes every 15 minutes, you will be sorry.

Line 110: This line clears the screen and gives you some idea of how long it takes your program to interpret and get ready for execution each time you enter *RUN* by pushing PF4. Don't forget what the "?" at the end of *RUN* does as far as the ENTER key is concerned.

Lines 120 to 130: These lines remind you what to do before you get too far ahead of yourself. These lines remind

you to prepare both the printer and the labels.

Lines 150 and 160: Line 150 reads the *DATA* statements found in Lines 610 to 830. Line 160 tells the computer when the *READ* statement has come to the end of the *DATA* file. This is preferable to having the program suddenly die and give out an error message.

Lines 170 to 250: These lines help the user visualize what the labels will look like. The *BAR\$* variable is something that can be used over and over again in the program. Each time you test run the program after typing it in, these frames will help you spot typical errors in the *DATA* statements. For example, if in Line 610, you reverse the order, you will have to go back to the previous Lines 200 and 470 to find out what the matter is with your typing. If in Lines 710 and 820 you use a comma instead of a semicolon, you will mess up the labels and have great difficulty. That's why it's important to test run the program on the screen and then on paper before using valuable labels. This type of practice will make you aware of the adjustments your printer requires. This awareness can give your finished product a professional appearance. It's better to do things right the first time around; that's what effectiveness is all about. Once you gain experience, you can speed things up; that's how your efficiency will increase. Remember that efficiency without effectiveness means doing the wrong thing quickly which is really a waste of time and effort.

Lines 260 to 280: These lines remind the user what to do. The use of *PRINT* for extra space makes you aware of what screen beauty is all about. A cluttered screen is a waste of time and effort. Make sure all your screens look nice to the eyes.

Lines 290 to 320: These lines illustrate the use of the dash key for dramatic emphasis. If used sparingly, this technique can draw attention to a necessary user action. You could have used a noise here, but this would grate on the user's nerves after a time.

Lines 330 to 360: The 'Y' and 'S' keys now assume important control functions. 'Y' prints the label without a space between names. 'S' prints the label with a space. You need to experiment with a piece of paper to decide which one better suits your purposes. The 'C' key produces multiple copies.

If you look ahead, you will notice that the 'C' key brings your program down to Lines 510 to 600. The same effect could have been done with a *GOSUB* routine, but we will save that for later.

Line 370: This line tells you what to do before you start printing on paper or on labels. This line is important to see every label on the screen before testing your printer. This line tells you what to do to go through the entire *DATA* file to be absolutely certain you have typed in each comma in its proper place. If you have any extra commas, you will be able to spot them and replace them with semicolons.

Lines 380 to 400: These lines show you how to get the question mark for input in the center of the screen. In our opinion, it is amateurish to have the "?" at the left end of the screen or too close to the text. The TAB key moved it over 22 spaces. The semicolon after the TAB kept the "?" from Line 400 on the same line as the TAB(22).

Line 410 to 460: These lines are the traffic controllers. They



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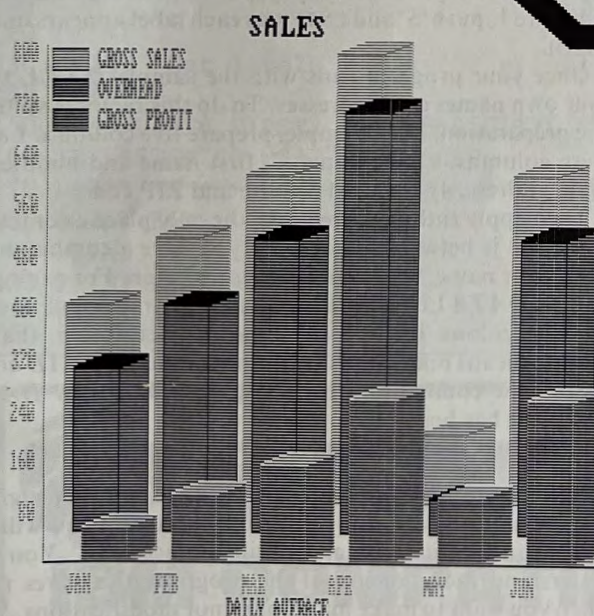
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assign different directions to 'C', 'S', or 'Y'. We have avoided the use of *ELSE* for a very practical reason. If you don't watch your *ELSE* directions, you can mess up these lines and get unexpected results. The only *ELSE* appears in Line 460. This *ELSE* makes the ENTER key perform its task of showing you the label on the screen while bypassing the printer. If you want to waste a few hours, try experimenting with *IF YES\$ = "C" or "c" THEN 510* and see what goes wrong until you add a different kind of repetition.

There are many places in this program where a more elegant coding could have done the same things with less repetition, but the purpose behind this simplification is to save you time the first time you want to produce labels. When you want to experiment, time is no obstacle. However, you must be prepared for a few hours of frustration that will give you experience with Sanyo BASIC.

Lines 470 to 490: These lines print the labels on the printer. Once you master the difference between the 'S' and the 'Y' control keys, you can experiment here. For example, you can add extra lines for different sizes of labels. You can remove the control keys in Lines 400 to 460 and have all the labels print out in sequence without any kind of visual inspection. You can build in more elaborate control keys that will permit visual inspection and then go on to batch printing.

Line 500: This line returns the program to Line 110 to repeat the printing cycle for the next label. Look ahead and notice that the same *GOTO* statement does the same thing in Line 600. Notice that Line 160 stops the program after the last label.

Lines 510 to 600: These lines produce multiple identical labels. You use these lines when you need more than one copy of a specific label.

Lines 540 and 590 show how the *FOR* and *NEXT* commands must be paired to work together. Forgetting either the *FOR* or the *NEXT* commands can produce a wide variety of errors.

Lines 610 to 830: These lines contain the *DATA* statements. Be especially careful about the order of the wording in Lines 610, 640, and 670. Refer back to Line 150 for the *READ* statement which correlates with the *PRINT* statement in Line 470 and with the *LPRINT* statements in Lines 470 and 560. Notice that the order for *FIRST\$* and *LAST\$* differ in the *READ* and *PRINT* statements. The reason for this is to let you keep your *DATA* statements in alphabetical order while your labels can still print the first name first. Labels with the last name printed first have an unprofessional appearance. They are not effective.

It is recommended that you study the above lines before you begin typing or keystroking. This preliminary study will help you get better and faster results.

Figure 1

Use this test to align labels.
Address line goes here.
City, State ZIP go here.

This is a double check.
Just to be certain.
Verify, the spacing on the label.

This is the final check.
Start over if all messed up.
Verify, left and right spacing.

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How to use this program for your own labels

The most important thing to do is to learn how to type in *DATA* statements accurately. This means it is a good idea to type in the *DATA* statements given in the program listing. While typing the *DATA* statements, be as accurate as possible. Then, test run your program. When you locate the error, correct it and then rerun. This is more systematic than trying to correct several errors at once and not knowing exactly where the trouble is. To stop the program when you spot an error, simply push ENTER.

As a guide, Figure 1 shows you how the labels should appear once they are correctly typed. To produce a duplicate of Figure 1, push 'S' and ENTER as each label appears on the screen.

Once your program runs with the sample *DATA*, type your own names and addresses. To do this requires systematic preparation. For example, prepare five columns. Label these columns: 1) last name, 2) first name and middle, 3) street address, 4) city, and 5) state and ZIP code.

Then apply ruthlessly one rule: the only place a comma is permitted is between columns. If you have a comma in an address or name, replace it with a semicolon. For example, refer to *DATA* Lines 710 and 820 for illustrations of how to use semicolons instead of commas. Remember that a comma means only one thing to the computer *READ* command. The comma tells the computer that a new *DATA* statement has begun.

Good luck and good labels!

Spending time reading and rereading the above program documentation will give you several benefits. You will do more than practice typing; you will practice BASIC. You will understand each portion of the program; this saves time when you want to make major or minor modifications. You will learn to use simple BASIC commands in a variety of ways. This avoids the need to keep track of advanced coding which may cause trouble if you forget one or more details. You will learn accuracy in the use of commas, periods, and semicolons. Hopefully, your reflections on the differences between effectiveness and efficiency will permit you to get more out of each minute you give to programming.

Learning by observation

Repetition is one way to learn. Here is an alphabetical review of all the BASIC commands you have studied so far. A few DOS commands have been mingled in to make you recall the difference between such things as *FILES* and *DIR*.

If any of these commands give you trouble, you need to reread the article before you begin to keystroke.

Of course, there is an even better method of learning and using all these commands. Sit down at your computer console and type them in one at a time. As you watch what happens, you will learn by observation.

CLS

Comma vs. Period vs. Semicolon

CTRL A

CTRL SHIFT C

CTRL F

CTRL G

CTRL I

CTRL SHIFT I

CTRL SHIFT K

CTRL N

CTRL P

CTRL T

DATA

DIR

END

FILES

FILES "B:"

FOR ... NEXT

GO TO

IF ... THEN ... ELSE

INPUT

KEY

LIST

LPRINT

NEW

PF KEYS # 1 TO 5

PF KEYS # 6 TO 10

PF KEY # 12

PRINT

READ

TAB

If you want to do so, you can practice writing in what each command does. It is not cheating to practice on the keyboard each time you forget exactly what each command means.

LABEL MAKER

The listing:

```
100 KEY 12, "LABELS"
110 CLS
120 PRINT
130 PRINT "Get labels ready for printing."
140 PRINT
150 READ LAST$, FIRST$, ADDRESS$, CITY$, STATEZIP$
160 IF LAST$ = "NO MORE" THEN END
170 BAR$ = "===== "
180 PRINT BAR$
190 PRINT
200 PRINT FIRST$; " "; LAST$
210 PRINT ADDRESS$
```



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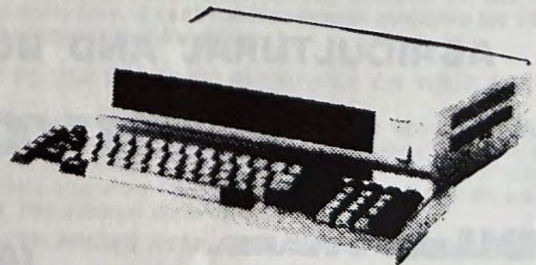
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```

220 PRINT CITY$;" ";STATEZIP$
230 PRINT
240 PRINT BAR$
250 PRINT
260 PRINT
270 PRINT "Examine the screen and the last label printed."
280 PRINT
290 PRINT
300 PRINT "Then push one of the following keys:"
310 PRINT "-----"
320 PRINT
330 PRINT "Y = ok to print;      S = SPACE before printing"
340 PRINT
350 PRINT TAB(11);"For multiple COPIES ---> C"
360 PRINT
370 PRINT "Push ENTER to review all files first."
380 PRINT
390 PRINT TAB(22);
400 INPUT YES$
410 IF YES$="c" THEN 510
420 IF YES$="C" THEN 510
430 IF YES$="S" THEN LPRINT : GOTO 470
440 IF YES$="s" THEN LPRINT : GOTO 470
450 IF YES$="Y" THEN 470
460 IF YES$="y" THEN 470 ELSE 110
470 LPRINT FIRST$;" ";LAST$
480 LPRINT ADDRESS$
490 LPRINT CITY$;" ";STATEZIP$

```

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```

500 GOTO 110
510 PRINT
520 PRINT "How many COPIES of label?",
530 INPUT REPEAT
540 FOR X=1 TO REPEAT
550 LPRINT
560 LPRINT FIRST$;" ";LAST$
570 LPRINT ADDRESS$
580 LPRINT CITY$;"", ";STATEZIP$
590 NEXT X
600 GOTO 110
610 DATA to align labels.,Use this test
620 DATA Address Line goes here.
630 DATA City,State Zip go here.
640 DATA a double check.,This is
650 DATA Just to be certain.
660 DATA Verify, the spacing on the label.
670 DATA the final check.,This is
680 DATA Start over if all messed up.
690 DATA Verify,left and right spacing.
720 DATA Gelinas,Claire,27 Norwood Street,Albany,NY 12203
730 DATA Gelinas,Howard C.,1405 Washington,Birmingham,MI 48009
740 DATA Howard,Emmett Peter,333 Bridge Ave; Apt # E-3,Melbourne,FL 32901
750 DATA Kobetz,Laura,322 Century,Howell,MI 48843
770 DATA McAvoy,Coleen,139 So. San Pedro,Los Angeles,CA 90014
800 DATA Suzuki,Nancy,33 S. Olive,Aurora,MO 65605
830 DATA NO MORE,NO MORE,NO MORE,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

```



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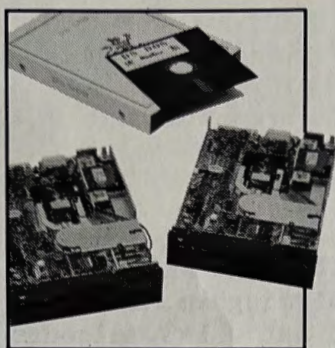
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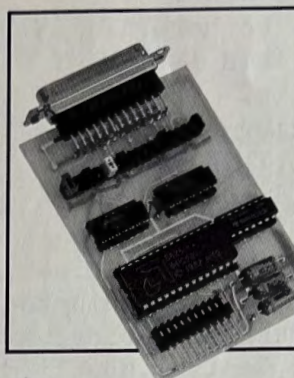
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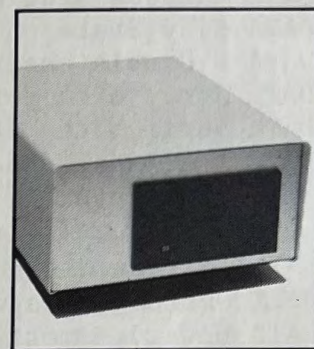
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SOFT TALK



RIVALS CAN SHAKE HANDS when you hook up one of Panasonic's new color monitors to your Sanyo 550/555. The CTF-1495M features a 14-inch "Data Grade," square corner picture tube that reduces light reflection and minimizes distortion at the corners. The nearly flat screen has a stripe pitch of only 0.47mm and can display up to 2,000 clear characters.

In addition to the standard RGB input, the CTF-1495M has inputs for standard video and audio as well as a set of inputs for Panasonic's new teletext decoder.

The suggested retail price of the CTF-1495M RGB monitor is \$499. For more information, write to Panasonic Company, One Panasonic Way, Secaucus, NJ 07094.

CAPITALISM 101. Computer Alpha Corporation, a New York company owned and run by college students, has announced the release of *Language Lab*, an educational language program. Language modules being released for use with *Language Lab* include Spanish, French, Italian, Portuguese and English as a second language (a lot of programmers should benefit from that last one!). These first releases are on the beginner's level, with intermediate and advanced level modules scheduled for release in December.

For prices and information about *Language Lab*, write to Computer Alpha Corporation, P.O. Box 182, Brooklyn, NY 11217.

Also from C.A.C. is an offer that's hard to turn down. They are offering what is claimed to be the most comprehensive catalog of software and upgrade equipment ever assembled for the Sanyo 550/555 computers. And best of all — it's *free*. For a copy, send a post card with your name and address to the address above.

A PUBLIC DOMAIN LIBRARY is now available to users of the Sanyo 550/555 through the New York Sanyo Users' Group. They have a growing collection of 120 programs catalogued in nine separate volumes that members of the group have either written or converted for use on the Sanyo, including games, utilities and financial programs.

Non-member users are invited to send their programs to the library and, for every two programs submitted, they are entitled to a free volume of programs. For a hard copy catalog of the MS-DOS Public Domain Library, send \$2 to the New York Sanyo Users' Group, P.O. Box 182, Brooklyn, NY 11217.

No, it isn't a mistake — the address is the same as for Computer Alpha Corporation listed above. With all this going on, where do you guys find time for class?

GETTING ORGANIZED. *DB-FABS*, a general purpose data, screen and report manager, is available from Computer Control Systems, Inc. Providing the user with tools for storing and retrieving information, *DB-FABS* allows for complete relational data modeling with inter-file relationships, full screen editing of user-definable screen layouts, report generation for custom data presentation, transferring data to and from other applications via standard ASCII files (with file conversion features), and modifications to the data file structure at any time without loss of data. Two modes of *DB-FABS* are provided: a stand-alone mode can be used

The following products are currently available for the Sanyo 550 series computers and will be reviewed in a future issue of Soft Sector.

by less experienced users to manipulate data files, screen formats and reports, while experienced programmers can use the run-time mode to handle file I/O, indexing, sorting, screen management and reports by calling the module from within other application programs.

DB-FABS is currently being offered for \$295, plus shipping charges, and includes a manual with tutorial sections on both operation modes. If you're interested, contact Computer Control Systems for more information: 298 21st Terrace S.E., Largo, FL 33541; (813) 586-1886.

WORDSTAR AT A GLANCE. A wall reference chart for *WordStar* is the first product to be marketed by the Program-Key Company. ProgramKey *WordStar* is a 24- by 36-inch, full color reference chart containing *WordStar*'s commands, as well as information on operating techniques.

The ProgramKey *WordStar* wall reference chart is being sold for \$9.95, and charts for other software and operating systems are currently under development. For more information about the product, contact ProgramKey Company, 3030 Bridgeway Blvd., Suite 215, Sausalito, CA 94965; (415) 388-9727.

AN END TO RIBBON PURCHASES. The Mac Inker, an automatic printer ribbon re-inker, is currently available for all models of printers. When print-out quality begins to deteriorate, the user loads the ribbon cartridge into the Mac Inker, presses the start button, and the correct amount of ink is metered and distributed evenly across the ribbon. The ink contains an emulsified lubricant and, according to Computer Friends, a ribbon of average quality can be re-inked at least 50 times.

The Mac Inker is available with multi-colored inks at a cost ranging from \$54.95 to \$69.95, depending on the type of ribbon cartridge to be used. For more specific information, contact Computer Friends, 6415 SW Canyon Court, Suite #10, Portland, OR 97225; (503) 297-2321.

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TV BREAK. With the new television tuner being offered by the TAXAN Corporation, when you get tired of programming, you can just switch over to *Late Night with David Letterman* for a break. The Model 305 television tuner will convert any brand of composite monitor with audio capability into a color television. And, because of the higher CRT quality in monitors, the picture should be much clearer than on most regular televisions.

The unit is currently priced at \$129.95. For further information, write to TAXAN Corporation, 18005 Cortney Court, City of Industry, CA 91748, or call (818) 810-1291.

With this gadget attached, the next screen dump you produce might be Fred Sanford's junkyard.

MATHEMATICAL MAGIC. A collection of entertaining and educational programs of "mathemagic" has been introduced for the Sanyo 550/555 computers. All the programs are written in BASIC by Dr. Michael Ecker, popular computer magazine columnist and associate professor of mathematics and computer science at the University of Scranton. *Magic Math Volume 1* includes *The Base 2 Trick*, *Triangle Number Trick*, *Kapreker's Constant*, *The Remarkable Number 153*, *Fibonacci Sequences*, *Pascal's Triangle*, *Digit Prediction*, *Super-Trick* and at least 10 others.

The price of *Magic Math Volume 1* is \$24.95 with a reproduction/distribution license available to schools, libraries and institutions for \$19.95 extra. For more information or to place an order, contact Recreational Mathematical Software, 129 Carol Drive, Clarks Summit, PA 18411, (717) 586-2784.

THE WRITING ON THE WALL. Anyone possessing a Sanyo 550/555 and a little imagination can become a high-tech artist with MichTron's new *Graffiti* graphics editor. The program supports all eight colors in the Sanyo palette and 640 by 200 resolution as well as text. It allows you to draw geometric figures, lines, dots and to paint. A highlighted menu controls all functions and drawing is accomplished using either the arrow keys or a joystick.

Graffiti has the ability to save drawings in two different formats: a condensed version for recall back into *Graffiti*, or as a BASIC file for merging with other programs. After being merged, a jump to the appropriate line number

will draw the complete picture.

Graffiti requires 256K of memory and sells for \$39.95. Contact MichTron for more information: 6655 Highland Road, Pontiac, MI 48054, (313) 666-4800.

ANOTHER DATABASE! Hoyle and Hoyle Software has introduced *Query!2*, a general database management system. The program features: 255 fields with up to 255 characters in each; a mail list print option; ability to search on up to 40 fields using any combination of "ands" or "ors"; and five different assistance menus.

Query!2 is currently priced at \$29.95 and is available from Hoyle and Hoyle Software, Inc., 716 S. Elam Ave., Greensboro, NC 27403.

CUSTOMIZE YOUR SCREEN with the *Character Generator* from Michigan Software. This program allows you to alter the actual characters and symbols that appear on your video monitor to characters of your own choosing. The program includes two complete character sets, Italics and Script, and an editor is provided for designing character sets of your own. The new character sets will work with most programs, including *WordStar* and *CalcStar*.

Character Generator can be obtained for \$24.95 from Michigan Software Dist. Inc., 43345 Grand River, Novi, MI 48050; phone (313) 348-4477.

A TEXT AND GRAPHICS screen dump program has been introduced by Michigan Software for the Sanyo 550/555 that supports Epson, BMC, Gemini and compatible printers. *Screen Print* is an interrupt driven program that can be used from DOS, from BASIC or from almost any program by pressing a combination of keys. It will print graphics as they appear, invert them, or let you select which of the eight possible colors that you want to print. Also, it has a keyboard form feed command.

Screen Print is available from Michigan Software Dist. Inc., 43345 Grand River, Novi, MI 48050; (313) 348-4477.

QUAD DOS, a family of quad-density operating systems, have been introduced by A-OK Computers. A-OK DOS-3 and A-OK DOS-4 support double-sided quad-density (DSQD), 96tpi, 80-track disk drives. A-OK DOS-3 is best if you want a mix of quad- and double-density drives, while A-OK DOS-4 is best if you want to use quad-density drives exclusively. Both support 800K per DSQD disk drive.

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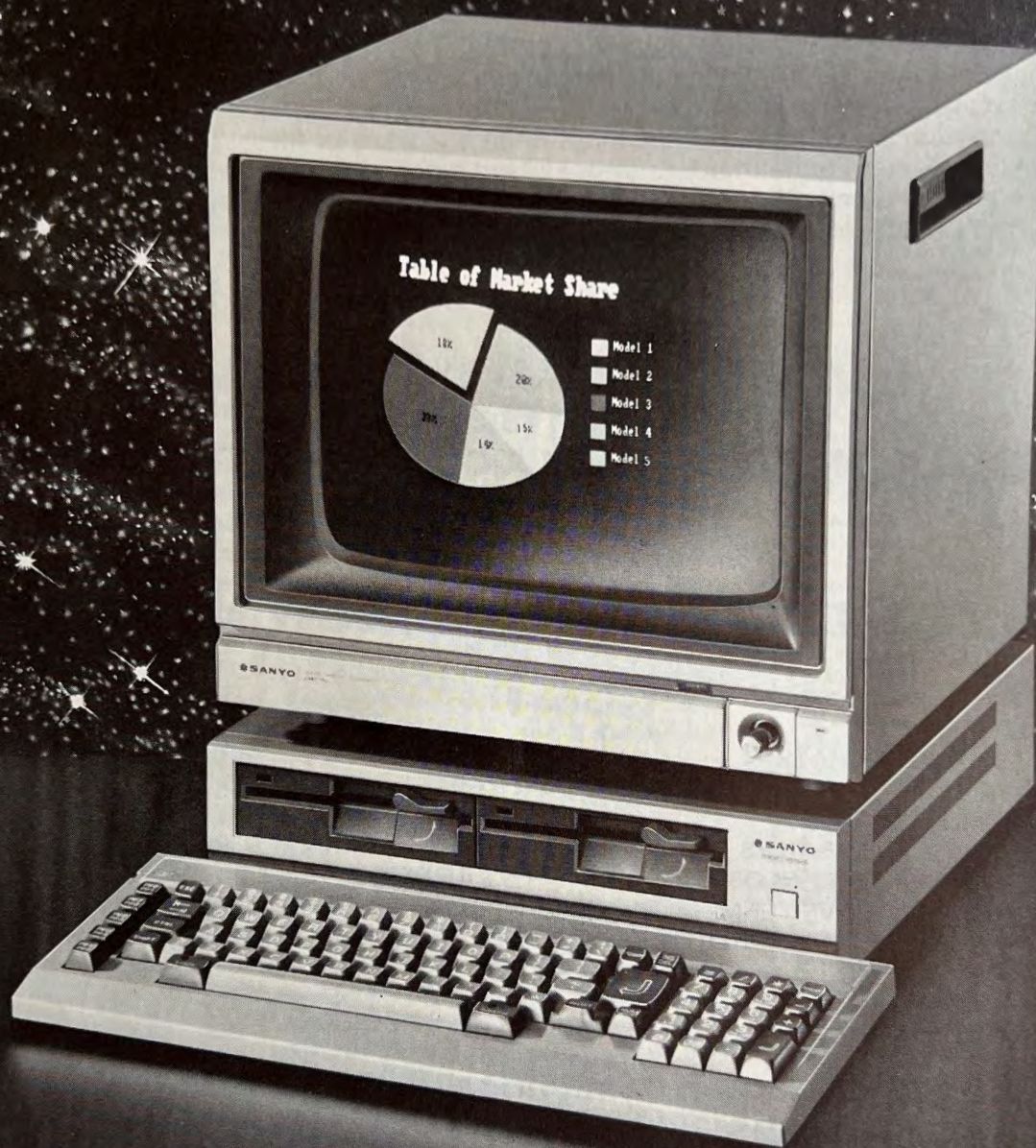
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The QUAD DOS family claims to be faster than MS-DOS 2.11 while supporting all the disk formats that 2.11 does. They offer user-controlled scrolling in all sub-systems by SHIFT ^S, including BASIC and programs such as *WordStar*, and a single-keystroke ASCII text screen dump is supported to any Sanyo compatible printer.

Also being introduced is A-OK DOS-2 for double-density drives, with all the standard A-OK DOS features and the ability to read, write and format 400K on double-sided disks and 200K on single-sided disks.

A-OK DOS is available for \$35, A-OK DOS-2 is \$45, and A-OK DOS-3 and 4 are \$55 each. For more complete information, write to A-OK Computers, 816 Easley St., Suite 615, Silver Spring, MD 20910; or call (301) 588-8446.

PARLEZ-VOUS FRANCAIS? Computer Engineers, Inc. has introduced *French Curves*, a new graphics drawing program for the Sanyo 550/555 computers. *French Curves* allows the user to reduce or enlarge the graphics creations, save them to or load them from disk, and dump them to most dot matrix printers. Graphics can be created and then incorporated into other programs.

French Curves is currently available for \$75 from Computer Engineers, Inc., Birmingham, AL 35218; (205) 781-0711.

PROPORTIONAL SPACING can now be installed in *WordStar* with *ProportionalStar*, by Writing Consultants. Based on their book, *Proportional Spacing on WordStar*, this new software package makes all the necessary patches without the user having to make them manually. *ProportionalStar* allows *WordStar*'s print command to send justified, proportionally spaced text directly to most popular daisywheel and thimble printers without calling another program.

ProportionalStar sells for \$75 and includes a copy of the book, *Proportional Spacing on WordStar*. For more information or to order, contact Writing Consultants, Suite 253, 11 Creek Bend Drive, Fairport, NY 14450; phone 1-800-828-6293.

FUN FOR THE FAMILY. Migraph Software has released a graphics puzzle game that can be used with the three demonstration pictures supplied with the program or with pictures created with their *Easy-Draw* program. *Picture-*

Puzzle lets you choose how many segments the picture will be divided into and how much the segments will be scrambled. Then it's up to you to slide the segments around with the arrow keys until the original picture has been reconstructed. At any time while you're working on the puzzle, you can take a look at what the original picture looks like. Also, if you finally give up on the puzzle, you can have the computer solve it for you.

Picture-Puzzle requires 256K of RAM and sells for \$39.95. To order, contact Migraph Software, 33125 15th Avenue South (B-121), Federal Way, WA 98003; phone (206) 839-6811.

IT'S A BIRD, IT'S A PLANE. No, it's Super Sanyo, an upgrade being offered by Greywolf Technologies. The upgrade kit contains two 800K, 96tpi TEAC drives and a binder containing a Greywolf I/O system diskette and documentation. With 1.6 megabytes of disk storage, these two floppy disk drives approach the capacity previously available only on hard disk systems. Additionally, the Super Sanyo has the ability to configure its drives to the formats of most other MS-DOS computers. This enables it to read, write and format diskettes from other computers and, for unknown disks, the Super Sanyo can determine the identity of the format.

For prices and information, contact Greywolf Technologies, 18 Dog Lane, Storrs, CT 06268; phone (203) 429-9209.

A WINDOW ON THE WORLD. Key Software Products recently announced a window-based operating system package for the Sanyo 550/555. *KSP Windows for CP/M-86* provides four independent display areas called "windows" that may be located anywhere on the screen, even right on top of one another. Each window may contain up to 24 rows of 80 columns, giving as much as four times the usual display space.

Using these windows, it is possible to keep a menu or any other console output always visible while running a program. In fact, three sets of console output data can be kept on the screen while running a program in the fourth window.

KSP Windows for CP/M-86 (monochrome only) sells for \$49, CP/M-86 Ver. 1.1 must be purchased separately for under \$50, and a set of conversion utility programs sells for an additional \$49. Contact Key Software Products, 440 Ninth Avenue, Menlo Park, CA 94025; phone (415) 364-9847.



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LETTERS

Continued from Page 7

Editor:

I have received my premier issue of **SOFT SECTOR** and I am extremely pleased with it. I believe it to be an amazing first issue.

I subscribe to other computer magazines, but they don't seem to realize that the Sanyo computers exist. I have sent away for two pieces of software advertised in **SOFT SECTOR** and I made sure that the companies knew where I had seen their ads.

The program listings were great — I'm using one as a teaching tool for graphics and the other has furnished me with an accurate amortization table for my house loan.

Some of the things our users group would

like to see in a future issue of **SOFT SECTOR** is an article on how to map the memory in the Sanyo and the tokens used by Sanyo for BASIC.

Keep up the good work.

Victor Johnson
Brevard Users Group
Palm Bay, FL

Editor:

I have been having trouble getting in touch with Wang Electronic Publishing Inc. about their *Random House ProofReader* spelling checker program recently reviewed in **SOFT SECTOR** [August '84, Page 46]. Can you help me out?

Marty Grassgreen
Sanibel Audio
Sanibel, FL

Editor's Note: Wang Electronic Publishing apparently no longer uses the address listed with the review. *Proof-Reader* can now be purchased through their new address: Wang Electronic Publishing Inc., M.S. 1401B, One Industrial Ave., Lowell, MA 01851, (617) 967-4541, \$50 postpaid; or from Digital Marketing Corp., 2363 Boulevard Circle, Walnut Creek, CA 94595, 1-800-826-2222.)

Editor:

Hooray! I can't begin to tell you how pleased I was to receive your subscription offer. I'm writing this letter on [my Sanyo MBC-550] using the bundled software (*Easy-Writer*) and am pleased to say that it is one of the best computers for the money I've seen. Enclosed you will find my subscription for your magazine and I don't mind telling you that I can't wait.

Once again, hooray!

G.M. Fritzsche
Santa Rosa, CA

Editor:

As an owner of my first computer, the Sanyo MBC-555, I was thrilled at receiving your magazine. I find I have to study the articles, but they are not generally beyond me, so they will be helping me to grow in knowledge. Thank you.

Bill Branham
Reinbeck, IA

Editor:

You asked, so here's what I'd like to see: a diagram and listing of pinouts for the parallel, serial and RGB ports.

Also, since we all have the bundled Micro-Pro software (initial buyers, at least), let's see some articles on how end users of OEM software can update to newer products like *InfoStar Plus*, *CorrectStar*, *StarBurst*, *StarIndex*, etc. I'm told that normal purchasers can send their disks in for a nominal fee and get the updated versions, but Sanyo and other OEM software users are up the proverbial creek.

I would also like to pass along that an excellent source for 550/555 information and programs is on CompuServe in the IBM SIG (PCS-131). In their database section XA9, a wealth of information and programs await your downloading. This is the "IBM Compatibles" section, but it seems to be

almost entirely Sanyo information and programs.

I was thrilled to the point of tingles down my spine when your premier issue arrived. I think we Sanyo 550 series users have finally arrived with our very own magazine. Hur-ray! And keep up the good work!

Steve Garman
Oklahoma City, OK

Editor:

I am pleased that the Sanyo 550/555 series is popular enough to support such a publication as **SOFT SECTOR**. Given the poor documentation that accompanied an otherwise excellent machine and the inability of many technical writers to effectively communicate

Continued on Page 60

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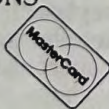
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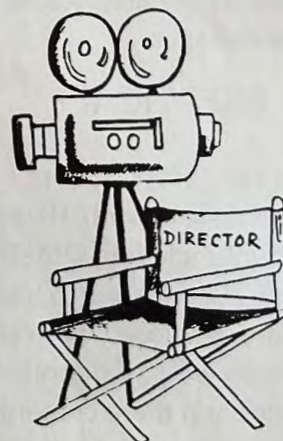
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More Basic Tactics And An Intro To Commands

Danny Humphress
Soft Sector Technical Editor

Congratulations are in order for you brave souls who joined me on my trek through the outer barriers of MS-DOSdom. Perhaps some of you were eager to forge on into the unknown without my wise guidance. Don't be so anxious, my friends, that you will go on ahead of the party and find yourselves lost in the abyss of directories, files and commands. We're going to take it slowly and carefully, shining our lamp beams down each dark corridor before we proceed, and taking care not to overlook any precious finds along the way.

If you'll remember from our previous explorations, we learned about what MS-DOS does and how it communicates with the components of the computer. We also uncovered some of the mysteries of files and directories. As you earn MS-DOS experience through our travels, you will gain wonderful insights as to how to put what you've learned to use.

In the excursion into the world of MS-DOS, we're going to finish going over basic MS-DOS survival tactics and begin to discover some of the many commands that our operating system provides.

Entering The World Of MS-DOS

You enter the World of MS-DOS each time you turn on your Sanyo 550/555 and put a disk in. Hard disk users have MS-DOS stored on their hard disk, so they don't even need a floppy disk. After the computer briefly checks itself and makes sure that there are no obvious equipment problems, it starts reading MS-DOS from the floppy or hard disk. It is at this point that MS-DOS takes control and displays its name, version number, and a lot of copyright notices to give credit where credit's due.

MS-DOS is so disoriented when you wake it that it doesn't even know what day or time it is. It will ask you first for the date and then for the time. It always thinks it's January 31, 1984 when you turn it on — talk about disorientation! Unlike most computer programs though, MS-DOS understands if you don't like to use leading zeros and slashes and the

like. To enter a date of June 9, 1984 for example, you would type any of the following:

6/9/84 06/9/84 06/09/1984
6-09-84 6-9-84

You can also just bypass entering the date and let the computer think that it really is January 31, 1984 by pressing ENTER without entering a date. I don't suggest this, however. As you will see, MS-DOS needs to know the correct date in order to give you correct information and for certain commands to work properly.

MS-DOS is a bit more particular about how you enter the time. It requires you to use European (military) time conventions (2:15 p.m. is 14:15). It also wants you to use colons between the hour, minutes and seconds and a decimal point between the seconds and hundredths of seconds if you want to be that accurate. The general format for entering the time is HH:MM:SS.nn where HH is hours, MM is minutes, SS is seconds and nn is hundredths of seconds. You need not bother with entering the seconds or fractions of seconds if you don't want — just entering as much of the time as will suit your purposes. The following are examples of properly entered times:

13:01:57.90 (1:01 p.m. 57.9 seconds)
11:05:41 (11:05 a.m. 41 seconds)
14:48 (2:48 p.m.)
16 (4:00 p.m.)

As with the date, you can just press ENTER here without entering a time. MS-DOS will start with 00:00:00.01 and count from there. Entering the time is not nearly as important as entering the date (I usually skip it), but it can be useful if you want to keep track of when during a day files are updated — more about that later.

MS-DOS Is At Your Command

Once it knows the date and time, MS-DOS stops asking questions. It is up to you to tell it — in its own language, of course — where you want to go and what you want to do. It just displays a "prompt" on the screen and patiently awaits your command.

MASTERING MS-DOS

(Danny Humphress, *SOFT SECTOR's* Technical Editor, is the owner of a computer software and consulting firm in Louisville, Ky. Danny brings to *SOFT SECTOR* his extensive experience with small business computers and applications software.)

One of two prompts may appear on the screen depending on whether you are using a floppy disk or not. If you are using a floppy disk system, or you have a disk in the floppy drive of your hard disk system, you will get an "A>" prompt. Hard disk booters are greeted with a "C>" prompt.

Remember in August when we talked about device names? Do 'A' and 'C' look familiar to you? They are device names for disk drives. 'A' is the name of the right-hand floppy disk drive and 'C' is the name of the hard disk drive.

What MS-DOS is telling you here is that any command you enter now will, unless you specify otherwise, take place on this particular disk drive. This is called the *default* drive. If you do not tell MS-DOS on which drive to perform a command, it will use the default drive. Likewise, if you want to access a file on drive B: and A: is your default, you must either change the default or specify drive B: when you access the file. This is important to remember.

Because the hard disk drive C: is the most often used drive on a hard disk system, the default drive if you have a hard disk is drive C:. Any commands you enter will default to drive C:.

If you want to change the default

drive to another drive, you simply type the drive letter followed by a colon and press ENTER. For example, to change the default drive to B:, enter B:. That's simple enough.

Communicating With MS-DOS

As with most computers, we communicate with our Sanyo 550/555 through its operating system (MS-DOS) by way of the standard human interface (the keyboard). MS-DOS does not care whether we enter our requests in UPPER-CASE or lowercase or any CoMbInAtIoN of upper and lower. It gets our message either way.

You let MS-DOS know your wishes by using specialized commands that it understands. Most of these commands involve "parameters" that give the specifics of how the command is to work and "path names" that tell MS-DOS which files and which disks or devices to use. A parameter usually follows the command. Each command has its own special syntax that we must learn in order to use them properly. Fortunately, most commands are similar enough for us to figure them out once we know the basic rules.

Some commands have required and optional parameters. For instance, we

may not need to enter a disk drive name because we want the computer to use the default drive.

In general, there are only a few basic types of command parameters. There are *filespecs* (file specifications) which include any or all of a drive name, directory names, and a file name. There are *arguments* which are a set of parameters from which you choose such as "ON" and "OFF." And we have *switches* that tell the command to act in a certain way depending upon the specific command.

As we learn about each individual command in MS-DOS, we'll explore the parameters that the command uses and how it changes the results. Once you begin using some of the "everyday" commands, you will be able to use your common sense to figure out how to use the others without ever having to crack the MS-DOS manual.

Learning The Native Tongue

MS-DOS has a language all its own. While it's very similar to our familiar English in many ways, it's more similar to Orwell's Newspeak with its rigid rules and sterile, efficient syntax. Fortunately for us, though, learning the language of MS-DOS is not nearly as difficult as learning a human language. There are

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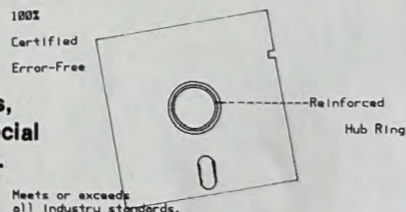
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only a few dozen words and only a handful of those will be used in everyday communication with your computer.

Unlike the Sanyo Operator's Guide that was packed with your new Sanyo 550/555, we're not going to go over each command in alphabetical order from *COPY* to *TYPE*. Instead, we'll begin with the fundamental commands and work our way up to the bells and whistles.

It's now time to hit the power switch on your Sanyo 550/555 (turn it on — not off) and get ready to do some exploring!

Formatting

Before MS-DOS can begin to put data on a floppy disk, the disk needs to be prepared to receive the data. This is called "formatting" a disk.

Have you ever tried to write a lengthy letter on a piece of blank, unruled paper? Of course you have. It's not easy to make nice neat lines across that paper, is it! It's even more difficult for a computer to write data on a blank floppy disk. Orderly as it is, the computer needs to be able to write the data on the disk in a neatly organized fashion. It needs to have those little lines to guide it along the disk. While formatting does not physically put lines on a disk, the effect is very similar.

The first thing you must do to a new disk is to format it. And this is the first command we're going to learn about.

Let's get started by "booting" (getting everything up and running on) our system with the disk labeled *MS-DOS/BASIC* that came with your Sanyo 550/555. Insert the disk in the right-hand drive and move the set lever down. Enter the current date and time when the computer asks. If you have a hard disk, just turn on the computer — there is no need for a diskette (you should have already followed the directions to initialize your hard disk).

After entering the date and time, you'll be greeted with an "A>" prompt ("C>" if you have a hard disk).

Get a blank disk. If you don't have one, go out right now and buy a box — you'll need them. Put this disk in the left drive of your computer (drive B:). What! No left drive? If you have no left drive, put the blank diskette in the only disk drive (drive A:).

Now, are we ready? Type the following command:

FORMAT B:/S or
FORMAT A:/S if you don't have
a second drive

We are telling MS-DOS to prepare the disk in drive B: (or A:). The "/S" is a "switch parameter" that tells the format command to make room for and copy MS-DOS to this disk. When a disk has MS-DOS on it, it is called a "system" disk. A disk with the system on it should always be in drive A: when you're using the computer. If you have a hard disk, the system is stored on it and you don't need to have a system disk in drive A:. More on this later.

MS-DOS's *FORMAT* command will display:

Insert new diskette for drive B:
and strike any key when ready

Put the disk in the specified drive, if it is not already there, and press any key on the keyboard.

Important: *FORMAT* completely erases anything that is on a disk, so be sure that you are formatting a new disk or that you really want to erase the disk in the format drive!

When the formatting is completed, you will be asked if you want to format another disk. You can go on formatting as many disks as you like. For now, press 'N' for no.

We will again have an "A>" or "C>" prompt telling us that MS-DOS is awaiting our next orders. The disk in the drive is newly formatted and is now ready for computer use.

There are a couple more things that *FORMAT* can do, but we'll save that for a little later.

The Most Important Commands

It is amazing how much we trust to the whim of a machine. We entrust this unthinking box with some of our most valuable possessions — time and money. When we store our precious data on a computer's floppy or hard disk, we assume that it will be safe and sound and that only a natural disaster could bring harm to it. Not so, my friends! What would happen if, for instance, the computer that handles *SOFT SECTOR*'s mailing list decides to delete all the names and addresses — it did happen. Can you imagine what it would take for us to rebuild this mailing list? Our only savior was that we religiously make "backup" copies of the data for just such an emergency. What could have been weeks of work and thousands of dollars in expense turned out to be only a minor inconvenience.

When you purchased your Sanyo

550/555, you received a disk with MS-DOS and BASIC on it. This is your "master" MS-DOS disk. You should use it for only one thing — making a copy of itself. This is true of any software package that you purchase. Use the original to make a copy and put it away in a safe place. Note, however, that some software cannot be copied. The software publishing company usually gives you a spare or offers to replace it for a nominal fee.

Once you start using a program, the information on the disk or disks becomes even more valuable than the program itself because you have added to it what cannot be replaced by a software publisher — your own data. It is imperative that you copy this important data on a regular basis (and keep several copies) to avoid a "data disaster."

The same holds true, even more so, if you are keeping your programs and data on a hard disk. There is so much to lose if something goes haywire with your hard disk drive.

MS-DOS provides several ways of copying entire disks. To copy a floppy disk, the most common method is to use *DISKCOPY*.

DISKCOPY makes a mirror-image copy of the floppy disk in drive A: onto the disk in drive B:.

Put your MS-DOS master disk in drive A: and a blank (or formatted) disk in drive B:. Type the following command:

DISKCOPY A: B:

You are told to insert the source disk in drive A:, the target in drive B:, and to strike any key when ready.

If you have only one disk drive, you will be prompted to switch disks when necessary.

After successfully copying and comparing the disks, you will be asked if you want to copy another. Like *FORMAT*, you can do this till the power goes off or you run out of disks. Let's just press 'N' for no and return to the "A>" prompt.

For those of you who are using hard disks, there is a special command for copying data from the hard disk to floppy disks which we'll discuss later.

Next Month

In October, we'll explore some of the other fundamental commands of MS-DOS. Of course, you will by now be using some of these commands on your own — good. After we've introduced ourselves to them, we'll take a closer look at what makes them tick. Until then. . .



INPUT/ OUTPUT

By Tim Purves
Soft Sector Contributing Editor

Q. *I have a printer capable of printing 132 characters wide, but under Sanyo BASIC it will only print 80 characters wide. What's wrong?*

A. Sanyo BASIC has a partial forms control built right in. The command *WIDTH X*, where X is a value between 30 and 255, is the maximum width the printer can print without BASIC sending a <CR> code. When BASIC is activated the width is set to 80 characters. If the width is specified as 255, BASIC assumes the width is infinity and no extra <CR> codes are sent.

Q. *When I use the CLEAR command in Sanyo BASIC, all I seem to get is an illegal function call. What is the syntax and how does it differ from TRS-80 BASIC?*

A. The *CLEAR* command, like in the TRS-80 BASIC, clears all simple and array variables, in addition to clearing all string and user-defined functions. The *CLEAR* command in Sanyo BASIC also has provisions to set aside space for machine language programs. The format for the *CLEAR* command is as follows:

CLEAR [size of machine language],[stack size],[array size]

The fields specified inside the brackets are optional fields. The machine language size is specified on a 16 byte basis. For example, *CLEAR 16* will reserve 16*16, or 265, bytes for a machine language subroutine. The stack size is a dummy parameter and is just a place holder in this implementation of BASIC. The array size parameter is used to specify the size of array storage available to user programs. This parameter is specified also in 16 byte increments. For instance, *CLEAR 16,,256* will clear 256 bytes for

(Tim Purves is an expert on the Sanyo 550/555 series computers and is an experienced programmer in assembly code, PASCAL, C and BASIC. He is available to answer any questions that the readers of SOFT SECTOR might have. All questions should be addressed to SOFT SECTOR, P.O. Box 385, Prospect, Ky., 40059.)

machine language and clear 256*16, or 4096, bytes for arrays. Normally, the array size is not specified, as the interpreter will allocate all available memory for arrays.

Q. *I have heard a lot about the reference manuals for Sanyo BASIC and MS-DOS. Are they worth the investment?*

A. In my opinion, the Sanyo reference manuals are very good. In fact, they are some of the best I have seen in the microcomputer industry. The original operator's guide did leave something to be desired, but the reference manuals are great. The reference manual for BASIC covers everything in detail from syntax to graphics. The manual for MS-DOS covers everything from operation to the format of system calls for machine language programs.

Q. *Why doesn't CTRL 'S' and BREAK work under MS-DOS 1.25?*

A. The CTRL 'S' function is normally used to pause a screen listing, and BREAK was used to abort the current task. The problem stems from a small bug in the Sanyo BIOS (Basic Input Output System) in that one of the routines that check keyboard status returned an improper value. Some of the after-market DOS patches have corrected this problem and these keys now function as they should.

Q. *Under Sanyo BASIC, how can I access files on drives other than the default drive?*

A. The biggest problem is that the filename routine requires that the drive be specified in uppercase. For example, to open a random file on drive "B:" with the name of *TIM* and record length of 128 bytes, you would specify:

OPEN "r",1,"B:tim",128

Q. *How can I echo the screen displays to my printer?*

A. MS-DOS has a built-in function to handle this. To start echoing data to the printer press CTRL 'P'. This will send all data to the printer. Make sure the printer is online and capable of printing or the system will "hang up" waiting for the printer to print. To turn off this function, press CTRL 'N'. Also, under MS-DOS 2.11, the CTRL 'N' will toggle on the CTRL 'P' function if it is not on.

Q. *I have a Sanyo 555 with 128K of memory. I have seen nine-chip memory sets for the IBM. Will they work in my Sanyo?*

A. One thing to keep in mind when buying memory upgrades is to deal with a reputable source. The memory required in the Sanyo are 4164s with a speed of at least 150ns. Slower chips may work (200ns), but they may be sensitive to temperature changes. The Sanyo only uses eight

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chips per 64K bank, unlike the IBM which uses nine. In the IBM, the ninth chip is used as a parity check. If the IBM detects a memory parity error, it bombs back to DOS Ready, losing everything you're working on. With the current state of technology, memory flaws don't occur very often. After you install extra memory in your machine, check it out with the program *MTEST* supplied by Sanyo on the later MS-DOS system disks, or check with your Sanyo dealer for assistance.

Q. *I would like to hook up an RGB color monitor to my Sanyo. What are the pinouts for monitor?*

A. The pinouts are as follows:

Round Connector	DIP Connector	Signal Name
1	3	Red Video Signal
2		No Connection
3	8	Horizontal Sync
4	1,5,6	Signal Ground
5	7	Vertical Sync
6		No Connection
7	2	Green Video Signal
8	4	Blue Video Signal

Note that the Sanyo uses an active low-sync pulse; monitors that need an active high pulse will *not* work. I personally use a Panasonic CT-1300D and I am pleased with the display quality.

Q. *When using WordStar with a large file, I find it very sluggish. How can I speed it up?*

A. One of the best ways is to run *WordStar* from a hard disk or a "memory disk." This can double the speed of overlay loading. Take note that this will not speed up the screen display, only file loading. Another tip is to move to the end of the file when you start to edit. This causes *WordStar* to load the entire file into memory, rather than to page the file in and out from the disk drive.

Q. *When running certain programs on my monochrome monitor, the screen blinks on and off. This is very annoying. Can it be corrected?*

A. There is a very simple solution for this. All you need to do is change the switch settings inside of your Sanyo. The switch is inside the Sanyo near the joystick port by the back panel of the machine. The switch settings that I recommend are as follows:

Switch	Setting	Function
1	On	Provides three gray scale levels
2	Off	Half intensity
3	Off	Blink
4	Off	No function

Q. *What is a PEEK and a POKE in BASIC?*

A. These two instructions in BASIC are used to directly access the memory in the computer. A *PEEK* is used to read memory and a *POKE* is used to store to memory. On the Sanyo, the *PEEK* and *POKE* access the memory of the current segment as defined by the *DEF SEG* instruction. The definition of a segment is a block of memory 64K bytes long on a 16 byte boundary. For example, to access virtual memory address 32, you could use the following program:

```
10 DEF SEG=2:PRINT PEEK(0): 'PRINTS BYTE AT
    32 DECIMAL
20 DEF SEG=0:PRINT PEEK(32): 'PRINTS BYTE AT
    32 DECIMAL
```

The above program shows how segments can be overlapped. Refer to an 8088/8086 manual for more details on segments.

Q. *When I use an AUTOEXEC batch file, the DOS does not prompt for the date. How can I have the DOS ask for the date?*

A. All you need to do is to include the command *DATE* in the batch file and MS-DOS will prompt for the date and then continue with the rest of the batch file.

Q. *How do I LLIST a BASIC program without printing on the perforations?*

A. Sanyo BASIC has a forms control built right in. It is used like this:

```
LLIST [[start line]-[end line]], [lines per page]
```

The brackets indicate an optional parameter. If lines per page is specified, then Sanyo BASIC will issue a form feed and three blank lines, and then print the specified lines before issuing another form feed and three blank lines, continuing until all specified lines are printed. Lines per page must be an integer value between zero and 255.

Q. *How can I use the FILES command on other than the default drive? I tried B:FILES, but that didn't work.*

A. The *FILES* command works just like the *DIR* command at DOS level. The format of the command is as follows:

```
FILES ["wild card mask"]
```

For example, *FILES "B:"* will show the entire directory on drive B: and *FILES "B:*.BAS"* will show only files with the extension *.BAS* on drive B:.



Helpful Hint . . .

Pulling The Plug

Tampa, Fla., is the lightning capital of the U.S. A surge protector won't help if you get a direct strike, nor will a normal on/off switch. Pulling the computer's plug out of the wall is how we normally do it on summer afternoons, but that gets to be a drag. However, a pair of circuit breakers, one in each leg of the AC line, is as effective as the old double-bladed knife switch. I know it works! My house was struck recently — it knocked out a light and the top off the tropical fish tank, but no computer damage!

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**CLUBS
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BOOK REVIEWS

By Howard Alvir

WordStar Made Easy
by Walter A. Ettlin

Learning IBM BASIC For The Personal Computer
by David A. Lien

BASIC Computer Programs For The Home
by Charles Sternberg

These book reviews have one common thread. They all are answers to the question: "How much of this book applies directly to the Sanyo 550?" Implicitly, the emphasis is on the MS-DOS power they all share. For all practical purposes, our research has found one generalization, "If a program works on the 550, it works on all other MS-DOS clones." The glaring exception is Sanyo's BASIC which is simply too powerful for most competitors. For example, books we review on PC graphics end frequently with the conclusion, "What takes 60 or more commands on other machines can be done with two or three Sanyo one liners." The best book on PC BASIC is the one by David A. Lien. The 550 user can use this book right off the shelf. There is no need to do much translation from PC to 550. The best single collection of ready-to-keyboard BASIC programs is the one by Charles Sternberg. Most of his programs seem tailor-made for the Sanyo, in spite of the fact that they were written almost 10 years ago and appeared in print four years ago.

Your Word Processing Bible

Walter A. Ettlin, a high school business teacher, wrote *WordStar Made Easy* published by Osborne/McGraw-Hill in 1982. Its 162 pages can help you become an expert with *WordStar* in 90 minutes instead of 90 days. It gives you the skills you need for most business applications. The exercises it provides work, and give you confidence.

Why do you need such a book? If you bought the expensive *WordStar* manual to go beyond the Sanyo training guide, you are probably disappointed; the manual is too long, too difficult, too encyclopedic, too technical, and too much for the user whose concern is productivity rather than passing a difficult cryptography exam.

You don't need the *WordStar* manual until you have mastered and applied the book by Ettlin. The book is short; if you can't read it and apply it in 90 minutes, you need a speed reading course to get your reading ability up to grade eight. The book is easy; the table of contents is straightforward; each chapter explains each command and then provides examples. The book replaces the encyclopedia approach with a crib sheet style; if you had to pass an exam on *WordStar*, this would be the cheat sheet you would want up your sleeve.

The book explains technical procedures in a non-technical manner; there is never the implication that you are dumb if you can't immediately make *WordStar* dance the way you expect; it is a tribute to the author that he answers your questions before you ask them. Rather than make you scream out, "This book is too much for me," this book leaves

you feeling, "If Walt ever writes a companion manual for *CalcStar* or *InfoStar*, I'm going to buy one for home and one for the office, and a few more copies for my support staff." This is the kind of book that wears out from frequent use. It is also the kind of book that gets replaced frequently because you want to give copies to friends to show them how smart you were to find it and use it professionally.

Are there any hidden dangers in this book? First of all, absolutely refuse to buy the version that doesn't have a flexible spine plastic binding. This is doubly necessary if you intend to use it while working on the 550. The flexible spine allows you to get more mileage out of the book. The regular binding may be all right for a backup copy, but it is a pain when you have to keyboard and read at the same time.

How helpful is this book? Our users group gets about six to seven *WordStar* questions a day. This book helps us answer about three or four of them immediately. In addition, it gives us clues of exactly where to look up more technical answers in the complete *WordStar User's Guide*. This guide is not the one you get with the 550. It costs too much for the home user and is too difficult to use for the harried office worker who has the cash but not the time necessary to wade through. This created the need that Walter Ettlin filled with his best seller, *WordStar Made Easy*. Our experience is that users of *WordStar* who start with Walt's book seldom complain about how difficult it is to use this word processor. On the other hand, these carefully trained users are able to imitate the author by giving simple and clear answers to some very difficult word processing questions.

You get an extra benefit here. Once you have learned how to use *WordStar*, you are ready to use *CalcStar* professionally. You will then understand why the March 19, 1984 issue of *Computer World* found the 550 to be the number one configuration for spreadsheets. It won out over Toshiba, Eagle, SKS, Tandy 4, Kaypro 10 and 11, and Columbia for first place.

The Book Sanyo Should Steal

David A. Lien wrote *Learning IBM BASIC For The Personal Computer*, which Compusoft published in 1982. Lien is famous for his humorous approach to the Epson printer. It is a tossup whether the printer's reliability or Lien's insight contributed more to making it the number one printer.

This book is what the average person needs to get the most out of the 550. It presumes no experience whatsoever with a computer. The style is light and non-threatening. It is fun to read. Most books like this require constant machine interaction. This book is different. It is so direct and concrete that you can read a chapter on the bus and practice keyboarding what you have learned in your head. When you get to the machine, you will surprise yourself; you will be able to program in BASIC from day one of practice.

What's this book like? Its 53 chapters offer you bite-size lessons. You will never choke on too much in any one mouthful. If you get lazy, the book's exercises will force you to go back and pick up the pieces once you get overconfident.

If you are lazy and don't want to learn one step at a time, this book's index is what you should read first. Somehow, the table of contents is too cute to answer most of your urgent questions. If you forget fast and don't even recall

where you read what you just forgot, the index will save you time and effort. It can remind you quickly to do the right thing.

Where can this book confuse Sanyo users? The first chapter explains *FORMAT* and *DIR* (directory). The second chapter explains *BREAK*, *ENTER*, *NEW*, *RUN*, *PRINT*, *BACKSPACE*, quotation marks, and the cursor. The third chapter explains *LIST*, *REM*, *END*, error messages, and line numbering. So far, so good; it all applies to the 550. The fourth chapter explains *EDIT* and editing features; all you have to do in Sanyo is push the upward cursor and *ENTER*; to get out of the editing mode, all you do on the 550 is push *BREAK*. Thus, the 550 user can read chapter four and thank their lucky stars they didn't buy an expensive blue-colored PC, which is almost as ugly to edit as the Apple.

In short, this book won't confuse you on the Sanyo. It will train you thoroughly enough to spot the obvious and less obvious errors in the 550 directions manual.

According to Compusoft's recent catalog, there are only a few titles available from them. It would be a good idea to have users group members write to them with a simple request: we all want a Sanyo version of this book. Reading a book like this is a relaxing and enjoyable experience. It prepares the complete beginner to write custom software using the easy-to-learn techniques presented in this book.

Don't get carried away. This book is only the beginning course. What you learn here, you will learn well. However, you will learn only so much. This leads us to hope that volume two will soon appear.

Don't get cocky. Here in our users group, we get to talk to a wide cross-section of 550 owners. Some have extensive engineering and business backgrounds. It is rare to find more than one in 10 who do not own another computer. The trouble with some of these amateur programmers is that they never learned how to do it right. Lien's book is the antidote. He presents tiny steps forward in each chapter. Each of these steps is treated in depth. For example, he explains the purpose of each BASIC command. There is more stress on applications than on memorization. Then, come

the examples. You, the reader, learn by practicing examples that make sense. From your perusal of each chapter, you are given enough intellectual stimulation to dream up immediate applications of your own.

This makes the book worthwhile. It gets you using your computer for important things you want to do. In addition, you waste no time learning things nice to know but not important enough to make you a better programmer. This avoids the parrot talk syndrome. Parrot talk refers to professionals who know all the buzzwords, but are unable to code even the simplest program in BASIC or on a spreadsheet like *CalcStar*. There is no parrot talk in Lien's book. Let's hope he gets a new book out soon.

If you are trying to imitate Lien's style, here are a few guidelines. Stress applications of a programming language more than intricate syntax rules. Applications help the reader learn more quickly. A frequently repeated application helps the reader remember longer. Each time the user repeats the application, the value of the BASIC command sinks in.

Another Book Sanyo Should Steal

Charles Sternberg wrote *BASIC Computer Programs For The Home*, published by Hayden Books in 1980. There has to be an awfully good reason to review a four-year-old book whose only change has been a doubling in price by Hayden and a halving of price by Radio Shack. The fact simply is that the book has programs which run almost unchanged on the Sanyo. In 1984, it is hard to make that statement about other books.

There is another reason to recommend it. No matter how much we praised the Lien book in the above review, the facts are that most amateur programmers are unsystematic. They want to type in a long complicated program from a magazine or a book. They want the program to work immediately. Some of these hackers have a hard time admitting they made a keystroking mistake, much less a programming error. These readers will begin with Sternberg's book and

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move on to Lien's BASIC training book.

Our users group was wrong about this book. At first, we thought this would appeal only to homemakers. Our March membership survey revealed that the 27 percent of our members who are homemakers spent more time looking for home financial programs than for kitchen-oriented programs. These men and women wanted such programs but couldn't find them. This book contains about 10 of each type. In addition, it contains programs related to automobiles, television scheduling, and lists for many occasions and purposes. A reader can also find programs to tutor the children, to keep track of things such as expenses and plans, to develop a few family games, and to keep a hobbyist diary, such as golf, fishing, photography, greenhouse, CB radio, bowling, and diary writing. Other books and magazines try to do all this with much less success.

The purpose of this book is to help the owner start making the computer pay for itself from day one. The format of this book is logical. A narrative description explains the functions of each program. Reading only this section of each chapter is equivalent to learning exactly what a computer can do for you. If you have no idea what you expect and want from a computer, this introduction section of each chapter is a good way to determine if you really need a computer. If you don't want to type up one or more of these programs immediately, you probably don't need a 550.


Each program has both a complete listing and sample data. This approach tells you exactly what to keyboard. The 1984 reprint has more legible print in these listings than the 1980 version which seemed to confuse so many early read-

ers. The examples of output tell you what to expect from the program and provide a standard against which you can debug and benchmark the quality of your keyboarding ability.


Many readers want to customize everything they key in. This leads to many errors. The customizer forgets to change all the major variables to the custom made version. Each chapter lists all the major variables used by each program. Each variable has a description and an explanation. This alone is enough to justify the cost of the book.

This kind of documentation served as a model for the many new computer magazines that emerged in 1982 and 1983. Now it can be yours to practice in a few easy lessons.


What are the limitations of this book? This book relies heavily upon diskette files. With hard to program machines such as Apple, this solution can be tacitly approved. With the 550, a different approach is necessary. The Sanyo user needs to learn how to create disk files, both the random and the sequential variety.

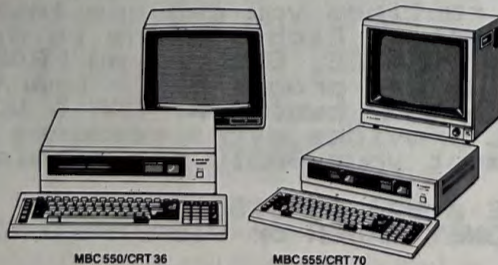
However, learning requires one step at a time. Anyone who wants to learn disk file processing should begin with this book. The practical mastery of the data statements prepares the user for disk file processing. Once the user knows the flow of the program, the user can easily make the transition to disk files. For example, with data statements, a user can duplicate screens and printouts which are as attractive and as organized as *MultiPlan*, *VisiCalc*, or *CalcStar*. Once the user can do this, a strong sense of power can take over. It can make the beginning programmer feel like a professional programmer. 

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Helpful Hint . . .

Make The Most Of RENUM And AUTO

In the absence of some overriding reason not to do so, programmers should generally use the *RENUM* command to renumber program lines after having debugged their programs. This would be especially useful in such cases as when submitting a program to *SOFT SECTOR*, because then the readers could use the *AUTO* command to number the program lines automatically when typing them in.

*Dr. Michael W. Ecker
Clarks Summit, PA*

REVIEWS

Software review

A-OK DOS And *PrintScreen 550* — An Unbeatable Combination

The developers of the new A-OK DOS operating system and its optional graphics-to-printer utility, *PrintScreen 550*, have truly developed a better mousetrap for the Sanyo 550/555 computer. A-OK Computers took a hard look at the other operating systems available — MS-DOS 1.25, 2.11 and Michtron's DS-DOS — and did some valuable re-designing, giving an already good system some extra features and capabilities. They have even worked out several of the DOS bugs that must have aggravated nearly every Sanyo 550/555 owner, such as the inability to stop and start document scrolling at the DOS level. (I always hated having to go into *WordStar* to look at a file). With A-OK DOS, to stop scrolling, just simultaneously hit SHIFT CTRL 'S' and to resume, hit any key.

With the other DOS versions, if you wish to print a document you must initially type CTRL 'P' and from then on everything typed or called up from DOS is printed until the system is rebooted. With A-OK, you have the option of typing SHIFT CTRL 'A' and printing just what you currently see on the screen. You can avoid having to use *LPRINT* statements in BASIC by using the SHIFT CTRL 'A' keystroke or an included *GOSUB* subroutine. This ASCII screen print feature also works in *WordStar* and will probably work in other subsystems. Non-ASCII characters will not be printed correctly in this mode.

The "Abort, Ignore, Retry" Error can be recovered without dumping the system. It can even recover from some

Interrupt Trap Errors. These were bugs associated with the original BIOS (Basic Input/Output System) which have been worked out. For example, it won't crash the system to insert an unformatted or foreign format disk. An error message is displayed, so there is the opportunity to recover.

The A-OK DOS-1, which does not have 10-sector or quad-drive capability, can utilize Michtron's *M-DISK* RAM disk program which can, of course, greatly improve program speed as well as saving on wear and tear of the drives. A-OK Computers has added an extra feature: *M-DISK* can be removed, regaining that memory without having to reboot the system.

A-OK DOS benchmarks much faster than MS-DOS 2.11 since it was built upon the MS-DOS 1.25. Like MS-DOS 2.11, it is able to support single- and double-sided drives and disks in both eight and nine sector formats (plus, with certain A-OK DOS versions, 10 sector and/or quad-density drives). However, A-OK does *not* have some of MS-DOS 2.11's time and space consuming esoteric enhancements which make it like UNIX in structure but not in function (i.e., subdirectories, hard disk utilities, and lengthy bootstrap and format tests).

All the utilities and programs which run on the other DOS versions should run perfectly on A-OK, except for several A-OK included utilities such as *FORMAT* and *DISKCOPY*, which have been revised and improved with defaults and choices.

For an additional \$24 over the price of A-OK DOS, you will get the *PrintScreen 550* (A-OK DOS is required to use this utility), which is a very simple and easy way to use graphics screen dump. *PrintScreen 550* currently supports most of the popular dot matrix printers, including the Oki-data 92P, Epson and compatibles, Gemini-10X, Panasonic 1090 and 1091, Mannesmann Tally Spirit 80, and Prowriter. Future updates will support multicolor ink-jet printers and A-OK promises additional printer installation enhancements to take advantage of other custom printer capabilities. System updates will be available to users at a modest charge.

Once you have gone through the easy and well docu-

mented, almost idiot-proof installation routine (maybe 15 minutes) for the DOS and *PrintScreen 550*, you are only minutes away from the first high-resolution printed hard copy of screen graphics that you have probably ever seen from your printer. Call up BASIC and *RUN "demo"* (Sanyo's demonstration program showing off the colors and graphics). Once the screen is filled with "SANYO MBC-550 series . . . If you want to stop the program please press SPACE bar", press the Space Bar and, next, simultaneously hit the SHIFT, CTRL and 'G' keys.

The printer is now printing a dot for dot, line for line scan of the screen at your printer's normal speed. Remember, it is scanning and printing everything on the screen, not just your graphics, so it will take a couple of minutes to dump the whole screen. The colors are reversed. You will notice that green, light blue, yellow and white will appear black (inked) while black, blue, red and purple will appear white (no ink).

In the horizontal graphics screen print mode just explained above, the hard copy artwork appears compressed vertically and elongated horizontally. This is because the actual Sanyo screen image is 640 horizontal pixels, or dots, while the vertical is only 200 pixels. Also, over a half-inch of the right margin is cut, because the Okidata 92 only prints 600 dots on the carriage instead of the needed 640.

I found that the rotated (or vertical) screen print is generally more useful. Shifting the screen graphics 90 degrees, it prints a normal looking two-dimensional picture. Using BASIC *WINDOW* and *VIEW* graphics commands allows larger pictures to be printed by splitting the graphics into several parts which can be printed in succession to make one large picture. A seven-line subroutine is included which may be inserted in a BASIC graphics program so that a number of pictures can be dumped to an unattended printer. These multiscreen features could be used for making full page graphics, posters or banners. The end result, with photographic reduction, can mean finely detailed, high-resolution artwork.

A-OK DOS-1, which supports *M-DISK* (not included) and up to 360K per drive, eight and nine sector, single- and double-sided drives is priced at a modest \$35. A-OK DOS-2 (\$45) supports up to 400K per drive, eight, nine and 10 sector, single- and double-density drives.

A-OK DOS-3 (\$55) supports up to 800K per drive, eight, nine and 10 sector, single-, double- and quad-density drives using any combination of drive formats with any being bootable. The DOS-3 is designed for a system which has a combination of a quad plus a single or double-density second drive. The quad drive can only read and write quad format and the second drive can then handle other formats. A-OK DOS-4 (\$55) supports up to 800K per drive and requires all quad-density drives although it can read, write and format disks in all other formats.

A-OK DOS-3 and 4 may provide an economic alternative to a hard disk. Quad-density drives can be purchased from some discount mail-order vendors for under \$250 each, and one of these drives can provide 800K per disk; one megabyte is equal to about 1000K.

The *PrintScreen 550* utility, which becomes an integral part of the A-OK DOS, is an extra \$24 with all versions.

(A-OK Computers, 816 Easley St., Suite 615, Silver Spring, MD 20910, (301) 588-8446, \$35-\$79)

— David Fried

Software review

States And Capitals — A Good Geography Drill

States and Capitals, from Olympic Educational Software, is designed to drill students on state geography and capitals by displaying sections of the United States with the individual states numbered and asking the student for the name of the state and its capital.

The colorful graphics used by this program when displaying the states should be enough to keep the interest of the student throughout the approximately 15 minutes of play time. I found the program very pleasant to use and easy to understand because of the emphasis placed on graphics by its designers. The real educational benefits become apparent after working with the program through several plays, striving to improve your score with each play as you learn the states and capitals.

For one, the student must enter the correct spelling and capitalization of both the state and its capital. While some may see this as an aggravation, proper capitalization is just as important as spelling to good grammar.

While using the program, you are given one chance to correctly identify the state. If the answer is incorrect, you are prompted with the correct state name and then the capital name is requested. With this, a dot appears on the state to pinpoint the capital's location, which I thought was a neat feature. While I believe that it would be advantageous to ask for incorrectly answered questions later in the game until all are answered correctly, the program simply continues on through the fifty states.

There is a pause between states to allow you to read the text on the screen, during which I often grew impatient and instinctively pressed ENTER to get on with things. Each time I did this, the program interpreted my pressing ENTER as the answer for the next question — I missed a few easy states this way. I was able to control my habit after a few minutes, but it would have been nice if the program would not accept a "null" answer and waited until I gave a valid (not necessarily correct) answer.

At the finish of the game, a report card appears showing the number and percentage of incorrect answers and the time taken to complete the drill. It then separately lists the state and capital names that were missed, allowing for study before beginning the drill again.

All things considered, I found this program to be both entertaining and educational, which is something that all computer aided instruction programs should strive for. At only \$29.95, I can't think of an easier or more fun way to brush up on your U.S. geography, and I'm certain that most children would prefer it to a dusty old Atlas.

(Olympic Educational Software, 1500 South 336th Suite 6, Federal Way, WA 98063, (206) 874-4044, \$29.95)

— Wayne Sanders

M-Disk — The \$34.95 'Disk Drive'

Do you find it hard to believe that for as little as \$34.95 you can add a second or third drive to your Sanyo MBC-550/555 system? With *M-DISK*, a utility sold by a Michigan company called MichTron, that is exactly what can happen. This amazing program will allow you to program any Sanyo computer with 256K of memory and either one or two drives into a system with an additional "phantom drive." The memory drive becomes B: on a single drive or C: on a dual-drive machine.

The *M-DISK* utility comes on disk in five versions, each to support a different MS-DOS configuration. With one version you will need a revised version of *COMMAND.COM*, as *M-DISK* will not function with *COMMAND.COM 1.17H*; however, the supported version of *COMMAND.COM* is included on the disk. The other versions of *M-DISK* are for double-sided drives — MS-DOS Version 2.11 and the various versions of MichTron's DS-DOS.

After your back-up copy is made, you are ready to set up your "phantom disk drive." This is accomplished by typing in the command *A:MDx/C/K* where *MDx* equals either *MD 1, 2, 3, 4* or *5*, depending upon the version required to support your DOS. The */C* specifies the designation of the drive you wish to establish and, if you use a designation of a drive already in existence, all the drives following your designation will be increased by one. That is, if you specify */B* on a two drive machine, then your hardware B: drive will become C: after *M-DISK* is loaded. The */K* specifies the amount of memory you want to allocate to the phantom drive. This may be any number between one and 128. In order for the Sanyo DOS to operate, it must have 128K available, so in a 256K machine, the maximum memory that may be placed in the phantom drive is 128K. It is that simple . . . almost.

When I attempted to load the program the first time, the following prompt appeared on the screen:

—WRONG DOS— MUST USE SANYO 1.25 DOS
MDISK ABORTED

After rereading the instructions and reloading the MS-DOS operating disk, determining that I had in fact the correct version of the DOS for the program I was trying to load, I tried it again. Same result!

After numerous attempts to no avail, I called MichTron for help. They were extremely courteous and indicated that they did not know how the program operated well enough to help, but directed me to the individual who wrote the program. After a two-minute conversation with Dale Schlott, the author of the program, the problem was solved. The problem wasn't with the program, but with the operator.

M-DISK program *MD1* is for MS-DOS Version 1.25 and *MD2* is for MS-DOS Version 2.11. Both work exactly as shown in the documentation. The programs *MD 3, 4* and *5* are in support of the various versions of MichTron's DS-DOS. I initially had a problem in getting the proper pro-

gram to load; however, the problem was the way I was following their instructions for making the DS-DOS version of the operating system and after a couple of tries, all versions of *M-DISK* worked as specified.

If you have an old copy of *M-DISK* — one listing the programs as *MD125*, *MD211* and *MDDS* — contact MichTron for an updated version of the disk. These programs contained some errors and they will not work with all versions of the DOS distributed by Sanyo.

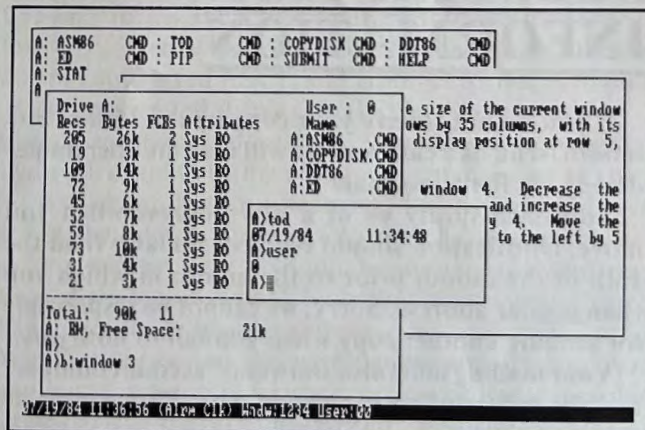
Following a suggestion in the documentation that came with the *M-DISK* program, I installed it with my *WordStar* program and set up the batch file to auto-execute it, establishing a phantom drive C: where *WordStar* would reside. It works just as described in the documentation. Now all help menu screens appear immediately without having to be read from a disk and I have both drive A: and B: to use for other purposes. I place my working text disk in drive B: and my dictionary in drive A:. This allows me to rotate between *WordStar*, my dictionary and my working text without having to change disks in the drives and the whole operation is immediate with no waiting for programs to be read into memory from disk as I change between *WordStar* and my dictionary.

The only obscure reference in the documentation is to the *Installing* procedure for getting *WordStar* to look for the menus on drive C:. After a couple of false attempts with the *Install* program for *WordStar*, I found the secret. Load the *Install* program and when the Installation Menu appears, choose option E — Menu of *WordStar* Features. When this menu is posted, press 'R' to select the default or system drive where *WordStar* is to look for the help messages and overlays. Set this value to C: and exit the *Install* program. Your

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WordStar program will automatically be loaded by the batch program into the phantom drive C: and *WordStar* will look to drive C: first for all help menus and overlays — a very fast and smooth working arrangement.

I have also set up my *EasyWriter I* word processor to operate from the phantom drive. The batch file for *EasyWriter I* should be set up using either *EDLIN* or *WordStar* in the non-document mode as follows:

```
MD5/C/105
COPY EW*.COM C:
COPY EW*.MSG C:
COPY CONFIG.OPT C:
COPY (name of printer file you use).PRT C:
COPY COMMAND.COM C:
COPY CHKDSK.COM C:
C:EWPRGM.COM
```

This is all placed in a file labeled *AUTOEXEC.BAT*.

The following files should be on the *EasyWriter I* disk so that the system you have built will work properly: *COMMAND.COM*, *CHKDSK.COM*, *printerfile.PRT*, *EWPRGM.COM*, *EWCONF.COM*, *EWPRNT.COM*, *EWPRGM.MSG*, *EWCONF.MSG*, *EWPRNT.MSG*, *CONFIG.OPT*, *MDx.COM* and *AUTOEXEC.BAT*.

All in all, *M-DISK* is an excellent program that works smoothly and in the blink of an eye. It is extremely easy to use and to set up so that programs like *WordStar*, *EasyWriter I* or *DataStar* work as rapidly as you can press the keys.

Is it worth the \$34.95? You bet! Even at twice the price, it is only a fraction of the price for an additional mechanical drive — and *M-DISK* works instantly. A 10 rating and another super program from MichTron.

(MichTron, 6655 Highland Road, Pontiac, MI 48054, (313) 666-4800, \$34.95)

— W. Fred Clabuesch

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Helpful Hint . . .

CRAPS Enhancement

The dot graphics in Roger Heitzeg's well-written *CRAPS* program (August '84) can be speeded up substantially by using graphics *PUT* statements in place of the dice clearing/drawing routines. It can be accomplished by replacing the following five sections of the program. (Note that several lines have been eliminated. List the given lines and get rid of the ones not shown.)



Lines 30-100:

```
30 '
40 CLS: SYMBOL(200,20),"C R A P S",3,3
50 LOCATE 7,26
60 PRINT"Welcome To Vega$!! 1 or 2 Can Play."
70 '
72 K1=3: K2=2: MAX=((153-3+8)/8*(80-5+1)*3+4)/
4+1: DIM B(MAX)
74 LINE(3,5)-(153,80),K2,B: GET(3,5)-(153,80),B
80 '
82 MAX=((100-60+8)/8*(50-30+1)*3+4)/4+1: DIM
A(MAX)
84 CIRCLE(80,40),20,,,K2: PAINT(80,42),K2:
GET(60,30)-(100,50),A
90 '
100 LOCATE 12,1: INPUT"WOULD YOU LIKE
INSTRUCTIONS";AS
```

Lines 620-630:

```
620 PUT(113,5),B: PUT(366,5),B:
```

Lines 2220-2280:

```
2220 PUT(113,5),B: PUT(366,5),B: RETURN
```

Lines 2710-2810:

```
2710 PUT(123,9),A: PUT(213,55),A: RETURN
2740 PUT(168,9),A: PUT(168,55),A: RETURN
2770 PUT(213,9),A: RETURN
2790 PUT(168,32),A: RETURN
2810 PUT(123,55),A
```

Lines 2860-2960:

```
2860 PUT(376,9),A: PUT(466,55),A: RETURN
2890 PUT(421,9),A: PUT(421,55),A: RETURN
2920 PUT(466,9),A: RETURN
2940 PUT(421,32),A: RETURN
2960 PUT(376,55),A
```

Alan Reed
Monrovia, CA

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Save Screen — A Fast, Useful Graphics Dump Utility

Save Screen is a fast screen-to-disk and disk-to-screen dump utility. Is it just another hacker's neat programming trick — with a price tag — destined to fill your shelf with one more useless program? No! It has real utility for a group of Sanyo users: the BASIC programmer using many screen graphics displays and the user of BASIC computer-aided design programs. *Save Screen* worked as claimed, seemed bug free and was not hard to use for a semi-skilled BASIC programmer (me) after the blanks in the instructions were filled.

The package allows the BASIC programmer to insert into a program a subroutine to save the screen directly to disk in about five seconds and later call it back from the disk to screen, also in five seconds. (Advertisements with the disk say that doing this would take five minutes using the "normal Sanyo BASIC and a graphics array file." I did not try it the "normal" way.) The screen must be assigned a file name in the program and the program must be told whether it is a "read from disk" or a "write to disk" operation.

The program arrives on a disk *without* write protection; before you even look at the instructions, protect it! One page of instructions was enclosed, half of which were directions to make a "for use" copy. Transfer utilities *START* and *START2*, for single- and dual-drive systems, were included for this purpose. They and the program *C.EXE* are not transferred to the system disk. The system disk also needs BASIC and *COMMAND.COM*. From the system disk, you load the program *SAVESCR.COM* under MS-DOS and then enter *BASIC"DEMO.BAS"*, which loads a short program and calls the screen file *DEMO.SCR* and prints it to the screen. The *LISTing* of the program is supposed to clarify everything. Being dumb (me, not the program), it didn't, so I called Mr. Landry of Michigan Software, who rather tactfully helped me over the hump.

Another program on the user disk, *SAVESCR.MRG*, allows one to merge the routine which calls the *SAVESCR.COM* program. In BASIC, type *MERGE"SAVESCR.MRG"* and, if using it as a subroutine, add the *RETURN* command (the routine is loaded as Lines 10000 through 10100). I *MERGED* it into the Sanyo *DEMO* program and saved some of its displays. Here is the code you will need, assuming the subroutine starts at 10000: *SCRNF\$="W":SCRN\$="NAME":GOSUB 10000* saves the screen to disk under the name of *NAME*. *SCRNF\$="R":SCRN\$="NAME":GOSUB 10000* loads the file *NAME* from disk to screen.

Above is the description; now the evaluation. As sug-

gested before, I found the documentation very skimpy. Since the novice BASIC programmer, or non-programming user, may use *Save Screen*, a printed listing which uses the program should accompany it. The listing should have explanations of all code (such as *CVI()*, etc.) and a hint of what the instruction does. This could be done as extensive marginal notes. There should also be an overview of the program in use. Unfortunately, the Sanyo manual that comes with the machine is not very complete or instructive for novices. A few pages should suffice. There is no excuse, in my opinion, for this lack; it certainly is not expensive, it gives away no secrets, and is the minimal courtesy owed the customer.

This program is not for everyone; those using only the supplied business software will have little need for it. But any BASIC programmer needing repeated screen displays, or user needing screen saves for records, will find the program very useful. For example, writers of educational software, where maps, charts, illustrations, etc., are used repeatedly, will want this program. Further, any program (in BASIC or with BASIC modules) that creates screen designs (computer-aided design programs for printed circuits, architectural drawings, scheduling networks, etc.) can be adapted to save the base grid as well as successive designs. Saving successive screens would require an automatic file naming procedure; for example, *Z\$="T"*. Then at save time, *Z\$=LEFT\$(Z\$,1)+STR\$(J):SCRN\$=Z\$* where 'J' is an index that is incremented after the save. With care, the writing and reading could be automated with programmable function keys. The disk with screen saves can then be used, in conjunction with a very good graphics screen print routine and bit image printer, to create printed copy of the designs. With a plotter/driver and a light pen (or mouse, touch screen or even joystick) a real computer design package exists.

A less exciting but possible business use might be in creating a "high tech" slide show, using the computer video screen instead of a slide projector and screen. Sounds corny, but if it generates traffic at booths, counters, etc., who's to argue with success? As the authors suggest, screen text can be saved to disk. Since ASCII text is so easily generated in Sanyo BASIC, I don't see the value in saving solely ASCII screen forms. For business programmers dealing with ASCII-only forms, the major selling point to *Save Screen* is its low cost; even if you don't use it that often, it didn't bankrupt you. Mixed ASCII and graphics forms, even those not needing repeated display, make *Save Screen* useful.

A short aside here; if you use *Save Screen* in programs that you sell or that you develop for clients, be sure to check with the distributor about licensing. Licensing is not mentioned in the documentation; you may have to purchase a copy for each customer. I should hope that utility software authors/distributors would be amenable to very reduced licensing fees for fellow developers.

Despite reservations concerning documentation, *Save Screen* has a definite place for the user of BASIC graphics programs, particularly design-type programs. Programmers may also find it very useful in a similar manner. I am sure many readers will think of other uses. If you have such a use in mind, this could be quite a buy.

(Michigan Software Distributors, 43345 Grand River, Novi, MI 48050, (313) 348-4477, \$24.95)

— David N. Wexler

Panasonic's CT-1300D RGB Monitor — Both Value And Quality

Since the MBC-550 series has color graphics capability as a standard feature, it's a crying shame that most of the suitable RGB monitors cost \$600-\$700 and more. While that doesn't sound so bad compared to a \$2,500-\$4,000 IBM PC, it seems peculiar for something used with a \$1,000-\$1,300 computer. The Sanyo, unlike some other MS-DOS systems, can only display color on an "RGB" (red-green-blue) monitor, so the cheaper composite monitors are ruled out. Since Panasonic's JR-200U home computer (now discontinued) has an RGB output, the Japanese electronics titan has introduced the CT-1300D RGB monitor at an attractively low price to go with it. The 1300D isn't limited to just that computer; as we will see, it works very well with the Sanyo.

The CT-1300D is a very compact unit, providing a 13-inch picture in a cabinet only 14 inches wide and not quite 13

inches tall. All the normal operating controls (except the on/off button) are concealed behind a pop-open door. Unlike Sanyo's own CRT-70 color monitor, the Panasonic has a picture control (labeled "Contrast") to let you adjust the brightness of the displayed picture to suit room lighting conditions. Since the 1300D is also intended for use with other computers that have a composite video output, as well as with video recorders, videodisc players and component TV tuners, there is a switch to select either RGB or composite video inputs and the necessary color and tint controls, as well as a volume control for the built-in audio circuitry (which is not used with the Sanyo). One thing you don't see on a normal TV set (at least not on the front panel) is the horizontal centering control, which compensates for the off-center images produced by some computers. (For some reason, a popular game I've played shifts the image way off to the right; I found that the "H-Centering" control is a great help in this situation.)

The really nice feature in this monitor is the "Data Grade" picture tube; it has a higher resolution than a regular 13 inch color TV set would because of its .52 mm stripe pitch, so it can adequately display the high-resolution text and graphics produced by the Sanyo. (This is often referred to as a "medium-resolution" tube; normal TV tubes usually have a 1.05 mm pitch, while the expensive "high-resolution" tubes used in monitors like the Sanyo CRT-70 and the IBM Color Display typically have a .31 mm dot pitch.) In use with the Sanyo here at SOFT SECTOR's editorial office, I have had no trouble at all reading text on the 1300D, although characters do lose sharpness to some extent at the edges of the screen and resolution is admittedly lower than on the CRT-70 or a good monochrome monitor (where stripe pitch is not a factor, since only one "color" is available). The monitor we have has a minor problem with convergence which causes the three colors to be slightly askew at the corners of the screen. The Data Grade tube's other benefit is the dark screen surface, which gives very high contrast even under bright room lighting.

The one black mark is the horrible sound produced by the small side-mounted speaker; don't count on using this monitor to watch "Evening At The Pops" or "Friday Night Videos." (The Sanyo 550 computers don't use a monitor's sound capabilities anyway, so you may not care.) Another note: fortuitously, the CT-1300D comes with an RGB monitor cable (intended for the Panasonic JR-200U and NEC PC-8001A) that fits the Sanyo exactly, so you won't have to run around trying to find one.

The CT-1300D is actually part of Panasonic's home TV line rather than a computer product; it carries the same one-year parts and labor warranty (two years on the picture tube) as other Panasonic color sets. It's available from many discount stores that handle home computers, as well as some computer and video stores.

I believe the Panasonic CT-1300D is a good choice for anyone who needs a color display for a Sanyo MBC-550 series computer. If your needs are critical, you may want to look at other monitors (but look at the price tags, too!).

(Available from Panasonic outlets nationwide, \$419.95)

— Ed Ellers



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*Italics, script or your own special characters —
only your imagination limits you with . . .*

FONT

@ # \$ % & ' () *
 ! " # \$ % & ' () *
 0 1 2 3 4 5 6 7 8 9 :
 @ A B C D E F G H I J
 P Q R S T U V W X Y Z
 ' a b c d e f g h i j
 p q r s t u v w x y z
 { | } ~ ¡ ¢ £ ¤ ¥ ¦ § ¨
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*The Custom Character Generator
By J. Weaver Jr.*

Sooner or later, every computer user tires of the type font built into his computer. Maybe your monitor needs fatter characters for easy reading, or maybe you have an exceptional monitor and want to try single-dot characters instead of double-dot. You might even want to use graphics symbols or characters not included in the built-in font, such as copyright and trademark symbols. Well

(J. Weaver Jr. is a free-lance programmer. A veteran of the TRS-80 Model I, Model III, and Color Computer, he is now writing full time on the Sanyo 550/555 and is the author of MI-TERM, SOLITARE and MAZ for the Sanyo. He can be reached on Compu-Serve at 71446,1362, on MCI Mail at FACTPROG, or through Factory Programming, W H Enterprises, 859 Winston, Monroe, MI 48161, (313) 241-WHWH.)

now, with the *FONT* character generator, you can have whatever you want.

The standard type font on the Sanyo 550/555 is held in a ROM (read only memory) addressed at segment FF00 Hex. But MS-DOS uses a pointer to this segment in low RAM (random access, or read/write memory). This allows you to implement your own unique type font. The *FONT* program helps you to design your own font and then creates a .COM file to install it into your DOS. And best of all, no editor, assembler or linker is required!

First, type in the BASIC program *FONT* from Listing 1. Note the two variables set in Line 40: *DOSPTR* and *SCRPTR*. *DOSPTR* is the location in memory of the pointer that the DOS uses to find the type font in memory. The value given in Listing 1 is for MS-DOS 2.11; for version 1.25, change this value to &H754. For MichTron's DS-DOS or Super DS-DOS, change the value to &H7C4. For other

DOSs, feel free to call the number in the capsule biography for help in finding the right value.

The second variable in Line 40, *SCRPTR*, is a pointer to the green screen segment in memory. The value given is for a memory size of 256K; for 128K use &H1C00 and for 192K use &H2C00. Be especially careful in entering the hexadecimal values in the *DATA* statements (Lines 80, 420, 430 and 440). Line 80 contains the values that are *POKEd* into the memory *CLEARed* by Line 40 as a machine language routine to move the standard type font from the high ROM to high RAM, where it can be modified. Lines 420 to 440 contain the code used to implement your type face in the final *.COM* file.

After entering and saving the *FONT* program, type *RUN*. For the first run, you will need to use the standard font as your base, so press 'S' at the first prompt. The complete character set will be displayed on the right-hand side of the screen. The top row displays characters zero to 15, the second row 16 through 31, and so on through all 256 characters. Use the arrow keys on the numeric keypad to move the cursor (the box around one character) and press ENTER to edit that character. An expanded view of the selected character will appear at the left side of the screen with a box around the upper left-hand block. Each character is built from an eight-by-eight grid, with each grid location representing one screen dot, or pixel. From the expanded view, use the arrows to move the cursor to the block you wish to change, and press '+' or '-' to set or reset the cursor block. When completed with the character, press ENTER to save the changed version, or ESC to cancel your changes. Edit each character in the font that you wish to change in the same manner. Your font-in-progress may be saved to disk, or loaded from disk, by pressing 'S' or 'L' from the main (select

character) menu. The filename *FONT.DAT* is used. The messages in the lower left-hand corner of the screen will remind you of your options throughout the program.

When your custom designed font is completed, it's time to build the driver to install it into the DOS. To do this, press 'C' from the main menu. The resulting disk file, *FONT.COM*, contains the 2,048-byte table of your new font, along with a short 8088 program to install it (see Listing 2). When the file is completed, press 'Q' from the main menu to exit the *FONT* program, and type *SYSTEM* to end BASIC and return to DOS.

To install the new font, simply type *FONT* from the DOS prompt. Your revised font is loaded into low memory and the DOS pointer is changed to activate it. The *INT 27H* at the end of the program returns control to DOS but leaves the font table in memory, protected from overlay by other programs, until the computer is turned off or Reset.

The new font table will reduce the amount of memory available to other programs by about 2,300 bytes of memory. Any program which uses the BASIC *PRINT* command or the standard DOS screen drivers (which includes most application programs and utilities, BASIC and the DOS itself) will use your replacement font instead. The BASIC *SYMBOL* command, however, will still use the original character set, as there is a separate pointer to the font table in BASIC for that command.

For best results, *FONT* should only be run once for each session, as each execution will remove another 2,300 bytes from general use. In addition, *FONT* should not be executed while any nonpermanent program (such as *WordStar*) is in progress. To simplify matters, you can put the *FONT* command into an *AUTOEXEC.BAT* batch file for automatic loading when the computer is booted up.

Listing 1 — *FONT.BAS*. This is a BASIC program that allows you to edit and create characters and builds the *FONT.COM* installer.

```

10 ' FONT.BAS - written by J. Weaver Jr.
20 ' Copyright (c) 1984 by Factory Programming
30 ' Permission granted for personal use only
40 CLS: CLEAR 200,1000: DEFINT A-Z: DEFSTR I: DIM A(7): DOSPTR=&H10A4: SCRPTR=&H3C00
50 LOCATE 25,1,0: DEF SEG=&HF400
60 POKE 0,192: PRESET(0,0): IF PEEK(0)<>64 THEN PRINT : GOTO 60
70 DEF SEG=SEG(4): FOR A=&H0 TO &H2A: READ I: POKE A,VAL("&H"+I): NEXT: CALL 0
80 DATA 1E,6,56,57,50,51,B8,0,FF,8E,D8,8C,C8,8E,C0,BE,0,0,BF,0,1,B9,0,4,F3,A5,B8
,40,0,8E,D8,90,90,90,90,90,59,58,5F,5E,7,1F,CB
90 A=SEG(4)-240: DEF SEG=&H40: POKE DOSPTR,A-INT(A/256)*256: POKE DOSPTR+1,INT(A/25
6)
100 LOCATE 1,1,0: PRINT "FONT - Sanyo type font creator": PRINT : PRINT "Load edited font from disk, or use standard font (L, S) ? ";: I=INKEY$
110 I=INKEY$: IF I="L" OR I="l" THEN PRINT I: GOTO 340 ELSE IF I<>"S" AND I<>"s" THEN 110
120 COLOR 2,0: CLS: DEF SEG=SEG(4)+16: FOR B=0 TO 15: FOR A=0 TO 15: PZ=B*960+A*8+496: P=(B*16+A)*8: DEF SEG=SEG(4)+16: FOR C=0 TO 7: A(C)=PEEK(P+C): NEXT: DEF SEG=SCRPTR: FOR C=0 TO 3: POKE PZ+C,A(C): POKE PZ+C+320,A(C+4): NEXT C,A,B: LX=0: LY=0
130 LINE(LX*16+348,LY*12+2)-(LX*16+363,LY*12+13),2,B
140 LOCATE 24,1,0: PRINT "ARROWS to move, ENTER to select, L to ";: LOCATE 25,1,0: PRINT "load, S to save, C for .COM, Q to quit ";
150 I=INKEY$: IF I=CHR$(13) THEN 180 ELSE IF I="L" OR I="l" THEN 340 ELSE IF I="S" OR I="s" THEN 360 ELSE IF I="C" OR I="c" THEN 380 ELSE IF I="Q" OR I="q" THEN 450
160 XD=0: YD=0: IF I=CHR$(28) THEN XD=-1 ELSE IF I=CHR$(29) THEN XD=1 ELSE IF I=CH

```



```

R$(30) THEN YD=-1 ELSE IF I=CHR$(31) THEN YD=1 ELSE 150
170 X=LX+XD:IF X<0 OR X>15 THEN 150 ELSE Y=LY+YD:IF Y<0 OR Y>15 THEN 150 ELSE LI
NE(LX*16+348,LY*12+2)-(LX*16+363,LY*12+13),0,B:LX=X:LY=Y:GOTO 130
180 CH=LY*16+LX:PP=CH*8:DEF SEG=SEG(4)+16:FOR A=0 TO 7:A(A)=PEEK(PP+A):NEXT
190 FOR Y=0 TO 7:Z=A(Y):B=128:FOR X=0 TO 7:C=SGN(Z AND B)*2:LINE (X*20+76,Y*20+1
0)-(X*20+95,Y*20+29),C,BF:B=B/2:NEXT X,Y:LINE(75,9)-(236,170),2,B:LOCATE 1,14,0:
PRINT "character"CH;
200 CX=0:CY=0:DEF SEG=SCRPTR:PZ=LY*960+LX*8+496
210 C=SGN(A(CY) AND 2^(7-CX))*2:LINE(CX*20+76,CY*20+10)-(CX*20+95,CY*20+29),2-C,
B
220 LOCATE 24,1,0:PRINT "ARROWS to move, + to set block, - to ";:LOCATE 25,1,0
:PRINT "reset block, ENTER to end, ESC to abort";
230 I=INKEY$:IF I=CHR$(13) THEN 280 ELSE IF I="+" THEN 300 ELSE IF I="-" THEN 32
0 ELSE IF I=CHR$(27) THEN 330
240 XD=0:YD=0:IF I=CHR$(28) THEN XD=-1 ELSE IF I=CHR$(29) THEN XD=1 ELSE IF I=CH
R$(30) THEN YD=-1 ELSE IF I=CHR$(31) THEN YD=1 ELSE IF I=CHR$(12) THEN XD=-CX:YD
=-CY ELSE 230
250 X=CX+XD:IF X<0 OR X>7 THEN 230
260 Y=CY+YD:IF Y<0 OR Y>7 THEN 230
270 LINE(CX*20+76,CY*20+10)-(CX*20+95,CY*20+29),C,B:CX=X:CY=Y:GOTO 210
280 DEF SEG=SEG(4)+16:FOR A=0 TO 7:POKE PP+A,A(A):NEXT
290 LINE(75,0)-(236,170),0,BF:GOTO 130
300 LINE(CX*20+76,CY*20+10)-(CX*20+95,CY*20+29),2,BF:A(CY)=A(CY) OR 2^(7-CX)
310 FOR A=0 TO 3:POKE PZ+A,A(A):POKE PZ+A+320,A(A+4):NEXT:GOTO 210
320 LINE(CX*20+76,CY*20+10)-(CX*20+95,CY*20+29),0,BF:A(CY)=A(CY) AND (255-2^(7-C
X)):GOTO 310
330 DEF SEG=SEG(4)+16:FOR A=0 TO 7:A(A)=PEEK(PP+A):NEXT:DEF SEG=SCRPTR:FOR A=0 T
O 3:POKE PZ+A,A(A):POKE PZ+A+320,A(A+4):NEXT:GOTO 290
340 OPEN"R",#1,"FONT.DAT",128:FIELD #1,128 AS IB:Z=0:LOCATE 24,1,0:PRINT "loadin
g file FONT.DAT"STRING$(22,32);:LOCATE 25,1,0:PRINT STRING$(43,32);
350 DEF SEG=SEG(4)+16:FOR A=1 TO 16:LOCATE 25,1,0:PRINT A;:GET #1,A:FOR B=1 TO 1
28:POKE Z+B-1,ASC(MID$(IB,B,1)):NEXT:Z=Z+128:NEXT:CLOSE:GOTO 120
360 OPEN"R",#1,"FONT.DAT",128:FIELD #1,128 AS IB:Z=0:LOCATE 24,1,0:PRINT "saving
file FONT.DAT"STRING$(23,32);:LOCATE 25,1,0:PRINT STRING$(43,32);
370 DEF SEG=SEG(4)+16:FOR A=1 TO 16:LOCATE 25,1,0:PRINT A;:I="":FOR B=1 TO 128:I
=I+CHR$(PEEK(Z+B-1)):NEXT:LSET IB=I:PUT #1,A:Z=Z+128:NEXT:CLOSE:GOTO 130
380 OPEN"O",#1,"FONT.COM":CLOSE:OPEN"R",#1,"FONT.COM",128:FIELD #1,128 AS IB:Z=1
:LOCATE 24,1,0:PRINT "creating file FONT.COM"STRING$(21,32);:LOCATE 25,1,0:PRINT
STRING$(43,32);
390 RESTORE 420:II="":FOR A=1 TO 3:READ I:II=II+CHR$(VAL("&H"+I)):NEXT
400 DEF SEG=SEG(4)+16:FOR A=0 TO 2040 STEP 8:LOCATE 25,1,0:PRINT A/8;:FOR B=A TO
A+7:II=II+CHR$(PEEK(B)):IF LEN(II)=128 THEN LSET IB=II:PUT #1,Z:Z=Z+1:II=""
410 NEXT B,A:FOR A=1 TO 14:READ I:II=II+CHR$(VAL("&H"+I)):NEXT:II=II+CHR$(DOSPTR
-INT(DOSPTR/256)*256)+CHR$(INT(DOSPTR/256)):FOR A=1 TO 18:READ I:II=II+CHR$(VAL(
"&H"+I)):NEXT:II=II+STRING$(128-LEN(II),0):LSET IB=II:PUT #1,Z:CLOSE:GOTO 130
420 DATA E9,0,8
430 DATA 8D,36,3,1,8D,3E,0,1,B9,0,8,F3,A4,BF
440 DATA B8,40,0,8E,D8,8C,C8,2D,F0,0,89,5,8D,16,3,9,CD,27
450 DEF SEG=&H40:POKE DOSPTR,0:POKE DOSPTR+1,&HFE:END

```

Listing 2 — *FONT.ASM*. This is the complete source code of the *FONT.COM* file shell into which the custom font is inserted.

```

name      FONT.COM

DOSPTR    equ      10A4h          ;SEE TEXT
CODE      segment public
          assume    CS:CODE,DS:CODE,SS:CODE

```

FONT

PENTRY:

JMP START

FONT db 0,0,0,0,0,0,0,0
db ...

;USER-DESIGNED FONT - 2048 BYTES

START:

LEA SI, FONT ;SET SOURCE POINTER
LEA DI, PENTRY ;SET DESTINATION POINTER
MOV CX, 0800h ;SET LENGTH
rep MOVSB ;MOVE FONT UP 3 BYTES

MOV DI, DOSPTR ;DI => SEGMENT POINTER IN DOS
MOV AX, 0040h

MOV DS, AX ;SET DS TO DOS SEGMENT
MOV AX, CS ;GET FONT SEGMENT

SUB AX, 000F0h ;CORRECT IT FOR DOS

MOV [DI], AX ;SET POINTER IN DOS

LEA DX, START ;DX => LAST BYTE OF FONT TABLE + 1

INT 27h ;TERMINATE, LEAVE NEW FONT RESIDENT

CODE ends

end PENTRY

FONT

FONT

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FONT

FONT

The Custom Character Generator



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Contributions to SOFT SECTOR are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

FORMAT: Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material which is longer than that. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550/555. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capitals. Use upper- and lowercase. While it is a big help to us in typesetting for you to send your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.

WHAT TO WRITE: Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. The more unique the idea, the more appeal. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

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For the benefit of those who wish more detailed information on making submissions, please send an SASE to: Submissions Editor, SOFT SECTOR, P.O. Box 385, Prospect, KY 40059. We will send you some more comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.

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[illegible]

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[illegible]

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[illegible]

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Making WordStar Shine

Part II

By Brian M. Stone
Soft Sector Contributing Editor

Several more printer-specific installation
procedures and then . . . on to color

In the August 1984 issue of *SOFT SECTOR* I wrote an article titled "Your Printer Can Shine With WordStar." In that article were explanations of how to get the most of the special features that are built into a variety of dot matrix printers. The following information will add five more printers so that more of you will be able to use the "bells and whistles" your printer has.

There is also a second part of this month's article which will take you through all of the steps necessary to install color in your version of *WordStar*. You *must* do the printer installation first because you run the risk of messing up *WordStar* if you don't.

I would like to thank Mark Zeiger of Sanyo Business Systems Corporation for furnishing some of the printer information that will be presented here. Mark is responsible for product research and development at Sanyo's U.S. office in Moonachie, N.J.

The information presented here is in the same format that was used in the original article. If you are unsure of how to implement it, you should obtain a copy of the August *SOFT SECTOR* and read the original article for full instructions. The printers that were discussed in the August article were:

Mannesmann Tally MT-80 Spirit
Epson MX-80 F/T with *Graftrax+*
Okidata 92, 93 and 84
NEC PC-8023A

This article will provide information to install five additional printers, which are:

C. Itoh Prowriter (8510)
HP-263B
IDS Prism 132
Gemini-10X
Gemini-15X

I would expect some of the more advanced users of the Sanyo MBC-550/555 series of computers to be able to install printers which have not been covered in this or the previous article. If requests are made through *SOFT SECTOR*, I will try to compile additional information on printers and furnish it as space and the number of requests warrant. If you have a printer which has not been mentioned so far, it will be necessary to furnish copies of the documentation which covers *all* of the control codes and escape sequences that are used by the printer to toggle the functions on and off. If this information is sent in, I will then furnish my interpretation of the best way to implement as many as possible of the "bells and whistles" for that printer.

The following five charts contain the control codes you should use to take advantage of your printer. These are only suggestions. If you want to install some of these features in *WordStar* in a different sequence, please do so, just make sure you write them down so you don't forget what they are. Now on to *Install*.



★ ★ ★

(Brian M. Stone is the national sales manager for Comput Distributors, Inc., a division of Inacom America, Inc. of Troy, Mich. Brian has been involved with computers since his purchase of the original Radio Shack Model I computer in July 1978.)

C. Itoh Prowriter (8510)

INITIALIZATION (Used by WordStar, not the user.)

START 1B 54 31 32 INITIALIZED FOR WS
END 1B 41 RESET ON EXIT OF WS

RETURN/LINE FEED (Used by WordStar, not the user.)

LF CODE 1B 66 0D 0A 0A NORMAL LINE FEED
½ LF CODE 0D 0A HALF LINE FEED

CHARACTER PITCH

^PN STANDARD 1B 4E 10 CHARACTERS PER INCH
^PA ALTERNATE 1B 51 17 CHARACTERS PER INCH

USER DEFINED

^PQ CODE 0E 5 CHARACTERS PER INCH —
ON
^PW CODE 0F 5 CHARACTERS PER INCH —
OFF
^PE CODE 1B 58 UNDERLINE ON
^PR CODE 1B 59 UNDERLINE OFF

RIBBON SELECTION

^PY TOGGLE ON 1B 45 12 CHARACTERS PER INCH
^PY TOGGLE OFF 1B 4E 10 CHARACTERS PER INCH

HP-263B

INITIALIZATION (Used by WordStar, not the user.)

START 0D 1B 26 6B 30 53 0F SET 12 LPI AND 10 CPI
1B 26 6C 30 64 30 4C
END 1B 26 6C 36 44 RESET TO 6 LPI

RETURN/LINE FEED (Used by WordStar, not the user.)

LF CODE 0D 0A 0A 2 LINE FEEDS PER CR
½ LF CODE 0D 0A 1 LINE FEED PER CR

USER DEFINED

^PQ CODE 0E ACTIVATE MATH CHARACTER SET
^PW CODE 0F RETURN TO NORMAL ALPHABET

RIBBON SELECTION

^PY TOGGLE ON 1B 26 64 44 START UNDERLINE
^PY TOGGLE OFF 1B 26 64 40 END UNDERLINE

IDS Prism 132

CARRIAGE ROLL

ROLL UP CODE 1B 19 19 ROLL UP PARTIAL LINE
ROLL DOWN CODE 1B 14 14 ROLL DOWN PARTIAL LINE

CHARACTER PITCH

^PN STANDARD 1D 10 CPI
^PA ALTERNATE 1E 12 CPI

USER DEFINED

^PQ CODE 02 DOUBLE WIDE OFF
^PW CODE 01 DOUBLE WIDE ON
^PE CODE 1F 16.8 CPI
^PR CODE 1B 52 INTERNATIONAL CHARACTERS *

RIBBON SELECTION

^PY TOGGLE ON 1B 51 3X 24 COLOR ON **
^PY TOGGLE OFF 1B 51 34 24 COLOR TO BLACK

* Note: After entering ^PR, enter the number from one to 16 that corresponds to the desired font. Then type a space followed by a dollar sign (\$). The number, the space and the dollar sign will appear on the screen as ^R4 \$. The font chosen remains in effect until another is chosen or the system is turned off.

**Note: From black to yellow/red use 31
From black to magenta/green use 32
From black to cyan/blue use 33

Gemini-10X

INITIALIZATION (Used by WordStar, not the user.)

START 1B 40 1B 41 06 1B 45 0D SET ½ LINE FEED MODE
EMPHASIZED ON
END 1B 40

RETURN/LINE FEED (Used by WordStar, not the user.)

LF CODE 0D 0A 0A 2 LINE FEEDS PER CR
½ LF CODE 0D 0A 1 LINE FEED PER CR

CHARACTER PITCH

^PN STANDARD 12 1B 45 16.5 CPI OFF
^PA ALTERNATE 1B 46 0F 16.5 CPI ON

USER DEFINED

^PQ CODE 1B 57 01 5 CPI ON
^PW CODE 1B 57 00 5 CPI OFF
^PE CODE 1B 2D 01 UNDERLINE ON
^PR CODE 1B 2D 00 UNDERLINE OFF

RIBBON SELECTION

^PY TOGGLE ON 1B 34 ITALICS ON
^PY TOGGLE OFF 1B 35 ITALICS OFF

Gemini-15X

INITIALIZATION (Used by WordStar, not the user.)

START 1B 40 1B 41 06 1B 45 0D SET ½ LINE FEED MODE
EMPHASIZED ON
END 1B 40 RESET TO 6 LPI

RETURN/LINE FEED (Used by WordStar, not the user.)

LF CODE 0D 0A 0A 2 LINE FEEDS PER CR
½ LF CODE 0D 0A 1 LINE FEED PER CR

CHARACTER PITCH

^PN STANDARD 12 1B 45 16.5 CPI OFF
^PA ALTERNATE 1B 46 0F 16.5 CPI ON

USER DEFINED

^PQ CODE 1B 57 01 5 CPI ON
^PW CODE 1B 57 00 5 CPI OFF
^PE CODE 1B 2D 01 UNDERLINE ON
^PR CODE 1B 2D 00 UNDERLINE OFF

RIBBON SELECTION

^PY TOGGLE ON 1B 34 ITALICS ON
^PY TOGGLE OFF 1B 35 ITALICS OFF

I hope many of you find this information useful and that you will take the time to try to use it. We can all look forward to getting more out of our computers if we will take the time to exchange information. That's really what **SOFT SECTOR** is all about. Remember, we all have different ideas and ways of doing things, so if you have found out how to do something, please share it with the rest of us. You never know; what you can't figure out, someone else might have done long ago and they are trying to find out that little obscure thing you know about.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Installing Color In WordStar

As I mentioned earlier, we will install color in *WordStar*. This is easy because Sanyo and MicroPro have furnished the utility program allowing us to modify *WordStar*. The reason this is discussed second is that you *must* install *WordStar* with the MicroPro *Install* program before you run *WSCOLOR.BAS*. If it is done out of order, you run the risk of messing up the *WordStar* program. So, if you have not installed *WordStar*, please see the first issue of **SOFT SECTOR** and follow the instructions in the previous installment of this series. This will give you the information you need before starting with *WSCOLOR.BAS*.

We will start with your installed file *WS.COM*. Please follow the instructions one through eight listed below. They will take you through all of the steps needed to create the disk to do a *Color Install* of *WordStar*.

The following examples will assume we are working with a Sanyo MBC-555 dual-drive computer. Please do the following:

- 1) Boot the system with your master system disk.
Format a disk in drive B:
Type *FORMAT B:/S* and press RETURN.
This also places *COMMAND.COM* on the disk.
- 2) Copy BASIC to the new disk.
Type *COPY A:BASIC.EXE B:* and press RETURN.
- 3) Remove your master system disk from drive A:
Put the new system disk in drive A:.
- 4) Put your installed *WordStar* disk in drive B:
(Make sure it is write protected!)
- 5) Copy *WS.COM* (or new name if renamed) to drive A:
Type *COPY B:WS.COM A:* and press RETURN.
- 6) Copy *WSCOLOR.BAS* to drive A:
Type *COPY B:WSCOLOR.BAS A:* and press RETURN.
- 7) Remove your master *WordStar* disk from drive B:.
- 8) Type *BASIC "WSCOLOR.BAS"* and press RETURN.

The screen will clear and the program will sign on as follows (what appears on the screen is set in bold type for clarity):

Sanyo WordStar 3.30 Color Installation Program

This program will allow you to change the colors used in *WordStar 3.30* on the Sanyo MBC-550/555 (with a color monitor) any time you wish to do so. Be sure to run *WINSTALL* first.

Once you have run this program, your copy of *WS.COM* may not function properly with your monochrome monitor.

Be sure to make a backup copy of your original first.
Do you want to continue with this program (Y/N)?

Press 'Y'. The screen will clear again and the following will be displayed:

WSCOLOR will enhance your enjoyment of *WordStar* without affecting its performance in any way. It is provided by MicroPro solely as a free addition to *WordStar*. This program is written in Advanced BASIC and is supplied with source code.

Once you have given *WSCOLOR* the name of your *WordStar* *COM* file, you may select the colors you desire from the displayed palette by moving the cursor and choosing the desired action. When you are finished and exited normally from *WSCOLOR*, subsequent use of *WordStar* will display those colors. If you don't like the effect run *WSCOLOR* again.

Do you still wish to continue (Y/N)?

Press 'Y'. The following will be added to the screen:

Name of the file containing *INSTALLED WordStar*
[Default: *WS.COM*]:

If you have not changed the file name, press RETURN, or type the name and press RETURN. The screen will clear and the following will appear:

Sanyo *WordStar* COLOR INSTALL, MicroPro International Corporation 1983. Blinking indicates current selection; use arrow keys to locate new selection.

ENHANCE WordStar with

P-r-o-p-o-r-t-i-o-n-a-l Spacing on WordStar

You are reading text printed by *WordStar* in proportional spacing, providing a professional, easy to read, typeset appearance, direct from the print command on any version of *WordStar*. Also print two or more columns on a page, underline spaces between words, and much more. Works with most letter quality printers (Diablo, Qume, NEC, Juki, Brother, C. Itoh, Silver Reed, others).

"The best and least expensive method of dramatically improving the appearance of any *WordStar* text" - LIST
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Okay! My check is enclosed for \$..... (or charge my VISA/MC acct # exp).

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Available Foreground/Background Color Combinations

	None	Blue	Green	Cyan	Red	Magenta	Yellow	White
None	Text	Text	Text	Text	Text	Text	Text	Text
Blue	Text		Text	Text	Text	Text	Text	Text
Green	Text	Text		Text	Text	Text	Text	Text
Cyan	Text	Text	Text		Text	Text	Text	Text
Red	Text	Text	Text	Text		Text	Text	Text
Magenta	Text	Text	Text	Text	Text		Text	Text
Yellow	Text	Text	Text	Text	Text	Text		Text
White	Text	Text	Text	Text	Text	Text	Text	

Key	Action	New	Old
C	Copy OLD colors to NEW	Menu	Menu
M	Set MENU colors to current selection	Text	Text
T	Set TEXT colors to current selection		
X	EXIT this program		
RETURN	Install new colors into <i>WS.COM</i>		

The above screen display will be shown in all of the colors available. Some monitors will display some color combinations better than others; this should be part of your consideration when selecting colors. The defaults are menus with black letters on a white background and text areas with white letters on a black background.

For obvious reasons you will not be able to select the same color for the characters and the background. Otherwise, you will be able to have any color letters on any color background. But as you will see, as you run *WSCOLOR*, some choices will be much better than others. I prefer the menus with blue letters on a cyan background and the text area with black letters on a cyan background. This combination has quite a bit of contrast and makes for easy reading of the

screen (for me anyway). The previous screen display is in color and will make your selection easy. If the combination that you selected is not as good as you thought, do it again until you like what you see.

I would suggest that you run *WS.COM* before you delete *BASIC* and *WSCOLOR.BAS* (as you will be instructed later in this article). This will make changing your selections easier if they are not to your liking.

The first column in the screen display is the character color and the next eight columns are the background colors with the characters in their correct color selection so you will see how they look. The second column, which is labeled "None," should actually be called "Black." None refers to the fact that there is no color (i.e., none of the seven choices available). The same is true for the first entry in column one.

For example, if you wanted yellow characters on a black background, move the cursor (with the arrow keys) to the sixth word "Text" in the second column and press 'T'. On the right side of the screen near the bottom under the heading "NEW," the word "Text" will change to yellow characters. This will indicate that all text will now be displayed in yellow letters on a black background. If you now move the cursor to the first (top) word "Text" in the yellow column and press the 'M' key, the word "Text" will be in black letters on a yellow background. These will now be your color selections. The next thing to do is press RETURN. This will display the following message:

Are you pleased with the NEW colors (Y/N)?



If you think you are satisfied with the colors this way, press 'Y'. The screen will now display:

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WS.COM patch completed.

This message will stay on the screen briefly and be replaced with:

Do you want to exit this program (Y/N)?

If you are happy with the selections, press 'Y' and the A: prompt will show at the top of a blank screen. Now let's see if we really like what we have done. Type *WS* and press RETURN. *WordStar* will sign on with the copyright notice and then display the following:

not editing

@@@

File *WSMSG.S.OVR* not found. Menus & messages will display as @@@@ only.

directory of disk A:

BASIC.EXE WSCOLOR.BAS COMMAND.COM WS.COM

Looks like a lot of garbage. Right? What did we do wrong? We didn't do anything wrong — we just didn't finish. What I wanted you to see was how your color selections looked. The words "not editing" will show you what all of the menus will look like and the "directory of disk A:" message is how your text will look. If you are pleased with what you chose we will continue. If not, go back and change your color selections until you find something you like. Remember, you can do this as many times as you like until you get what you want.

Let's assume that we have made the final changes and we have colors we can live with. We will now delete the files *BASIC.EXE* and *WSCOLOR.BAS*. Assuming you have done nothing else, press the Reset button and do the following.

Press RETURN twice to get the A: prompt.
Type *DEL WSCOLOR.BAS* and press RETURN.
Type *DEL BASIC.EXE* and press RETURN.
Type *DIR* and press RETURN.

You should have only *COMMAND.COM* and *WS.COM* on the disk. Insert *WordStar* disk one of three in drive B: (make sure it's write protected).

Type *COPY B:WS*.OVR A:* and press RETURN.

This will copy the two *WordStar* overlay files from your master disk to your working copy. Once this is done, you will have *WordStar* installed with colors that you have selected. If you type *DIR*, you will find these four files on your disk: *WS.COM*, *WSOVL1.OVR*, *WSMSG.S.OVR* and *COMMAND.COM*. These are the only files you will need to begin word processing on your Sanyo MBC-555 computer.

Now type *WS* and press RETURN. *WordStar* will sign on as before, but this time you will get the opening menu rather than the garbage we got after the first test. Now the only thing to do is start enjoying word processing with your personally customized copy of *WordStar*.



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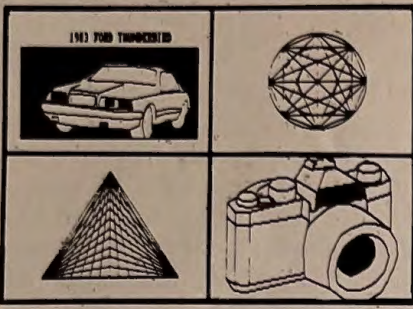
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LETTERS

Continued from Page 31

with non-hacker end users, something was clearly needed.

Your editing is clearly superior to other technical journals that I have read lately; however, your editor *did* request constructive criticism. On Page 53, in the article "Mastering MS-DOS," by Danny Humphress, a directory is defined as "a collection of files." If my understanding of the subject is correct, a directory is merely a collection of file *names*, not the actual files themselves. At any rate, while it is nice to know that one can build a hierarchy of directories, it would seem that the amount of time possibly saved in retrieving a file via that method is more than offset by the time required to type all that information into the command; the machine is faster than the operator. Is my intuitive conclusion correct?

Finally, I would like to comment about one of your advertisers: Computer User Services of Hackensack, N.J. Shortly after I purchased my 555 and had time to discover the sad state of the documentation, I purchased their *Sanyo Handbook*, hoping that it would be better than the literature provided by Sanyo. It was not. It is poorly edited and cheaply reproduced. In short, the cost of the book exceeds its value by far.

I am looking forward to the next issue as, from reading the premier issue from cover to cover, there is no doubt that it will be a highly informative bargain.

Robert E. McCoy
Mt. Rainier, MD

Editor's Note: You're correct about the directory — insofar as such a simple definition can apply to such a complex device, we stand corrected. As for MS-DOS's multiple directory capability, it can prove invaluable in many instances. As a very simple example, we take authors' submissions to **SOFT SECTOR** and copy both the text and program files onto a master disk under a directory of the author's name. The feature's usefulness increases as the amount of disk space increases, so it is most useful with hard disks. But with 800K now available on some of the new floppy disk drives — as you say, "the machine is faster than the operator" — it's easier to type an eight letter directory name than it is to figure out which file you need from among several hundred filenames.

Editor:

After being a faithful reader and subscriber to **THE RAINBOW** from the early days, I was dumbfounded to see that you are going to start publishing a magazine for the Sanyo 550/555 computers. Having just purchased a Sanyo 555 with two double-sided, double-density drives, I felt a little guilty setting aside my faithful CoCo [Radio Shack Color Computer] for a newer computer. It was a very neat feeling to find out that I wasn't going to lose my favorite editor.

I have been itching to get a more powerful computer for a long time and, after looking the market over, I purchased my Sanyo. With the low price, the bundled software was ice cream on the cake.

I'll be looking forward to each of **SOFT SECTOR**.

Austin J. Smith
Sutter, CA

Editor:

Congratulations and thank you for the new **SOFT SECTOR** magazine. It's just like "old home week" for me. My first computer was the Radio Shack Color Computer and my favorite source of information was **THE RAINBOW** magazine. When I purchased my Sanyo, I knew information would be hard to find, but when I found out that the crew from **THE RAINBOW** had started **SOFT SECTOR** ... well, words just can't express my joy and appreciation. As with **THE RAINBOW** in the past, **SOFT SECTOR** will be a major factor in helping me select the programs and sources for my new Sanyo in the future.

Jerry Bennett
Flint, MI

Editor:

I just got my copy of the first issue of your new magazine — and thank goodness you're going to be around! I got my 555 over six months ago and have been enormously pleased with the machine and the bundled software. My dealer is, to be charitable, somewhat lackluster in support and information. I think it's fair to say that I learned more in a few hours reading your first issue than I have in months of badgering the dealer, poring over other magazines and trying to figure out how they do and don't apply, etc.

I'm looking forward to your future issues. Given my own current expectations, I'd most like to see reviews of and/or advice regarding hardware upgrades, including memory chips to expand to 256K, double-sided drives (is the 720K drive I see advertised a pipe dream, a nightmare, or a realistic possibility), and hard disks.

Enough. Thanks for being there.

Paul Slocomb
Chicago, IL

Editor:

I have the 555 and am quite pleased with it as it is doing everything that I needed to be able to do. I run three mailing lists on it and am printing somewhere between 2,000 and 3,000 labels a month. I purchased the *Postmaster* program from Olympic Educational Software and am fairly well pleased with it. It has a couple of minor flaws in it: you can't tell how many names you have in it until it gets full and the documentation does not say what you can use to define "Other 1" (you can't use a number greater than nine, I found out, though letters work okay). Besides that, it is a good running program.

Before I got this computer I was using a smaller machine and the time it took with that program to change or add a name was sometimes as long as 15 minutes. One time it took 25 minutes to change four names. The present program from O.E.C. allows me to

change or add a name in two minutes or less. The search time is really something, since I figured it would slow down with the number of names on the disk (425+). But the only time it takes its time is when listing by alphabetical order. There, the time can be two or three minutes before it starts printing.

Do you know of anyone having a program to keep league bowling records for a team and the individual players available yet?

Thanks for your time.

John Horning
Republic, MO

Editor:

I sincerely applaud you for this wonderful premier issue of *SOFT SECTOR* magazine. Your tutorials are very informative and have helped to finally make some mind-bending problems all just click into place. Becoming a subscriber immediately is only common sense.

My dual-drive MBC is a wonderful tool which I hope to use for many years to come. The more time spent with this machine, the more I realize its amazing potential. Thank you for your publication. I will look forward to receiving every issue.

David G. O'Dell
Jacksonville, FL

Editor:

I own a Sanyo MBC-555 computer and I have acquired the game *Cashman*. I have found that if you hit CTRL 'N' while playing, you will advance to the next screen. Also, if you use it on the last screen of "Super Jump" (going into moderate), it will stay in the Super Jump level while still advancing you by screens. This enables you to jump extra high in moderate, no jumping, and expert modes. All you have to do is save the last cash on every screen after I2 and CTRL 'N' before you clear the screen.

Lorien Gabel
Toronto, Ontario

Editor:

Congratulations on your new magazine, *SOFT SECTOR*. I think that it is a fine publication and sorely needed.

I am a Sanyo 555 owner and devotee. This is without a doubt the finest hardware available at an affordable price, which incidentally, comes with the worst documentation that I have ever seen.

I would like to subscribe to your publication, but I frequent The Book Rack, where I purchased all my equipment and other publications. I feel that he does a very fine job and will purchase all my future copies of the magazine from him. He has to stay in business also.

Again, well done, and keep the copies coming.

G.K. Wood
Columbus, OH

Editor's Note: Absolutely, Mr. Wood. We encourage everyone to patronize the businesses that carry *SOFT SECTOR* on their racks.

Editor:

I was very pleased with my first issue of *SOFT SECTOR*. I must admit that I am a neophyte at using my Sanyo 550 computer, but hopefully will dispose of the frustrations that go along with being a newcomer to the world of personal computing.

In his article "Bridging The Compatibility Gap," [August '84] Mr. Raper referred to *PC-FILE* as "user-supported software." Could you let me know how to obtain access to compatible software such as this.

Geo. Bruce Davidson
Houston, TX

Editor's Note: According to a recent news release from the New York Sanyo Users Group, they have *PC-FILE* and its documentation in their Sanyo MS-DOS Public Domain Library. It should be stressed, however (as Mr. Raper pointed out in his article), that "user-supported" does not mean the same thing as "public domain." For the New York Sanyo Users Group's address, see the item about the group in this month's "Soft Talk" section.

Editor:

Your first issue was superb! All at *SOFT SECTOR* are to be commended for their outstanding work. What a valuable resource for users!

The single most scarcity of information for my application needs has been on the RS-232C interface. Sanyo encloses a little slip of paper with the interface that says, "see the *Operator's Guide* for installation instructions": no clues on setting up the handshaking or even how to use the IN/OUT port statements!

Telecommunications may not be a very popular subject yet, but I think you'll agree that it's becoming a hot item. Since this is my main interest (and frustration!), it is my first choice for inclusion as an ongoing series of articles and/or column in your magazine. Initially, I'd like to see some examples of BASIC and assembly language terminal programs. BBS listings, uploading, downloading, converting IBM PC terminal programs, protocols . . . are a few ideas for topics.

The second suggestion is a simple one. When I pick up a computer magazine at the newsstand and there are some advertisers that I might like to send inquiries to, the convenience of a postpaid reader service card is a big plus in my book. If you're in no hurry for the information, it's a lot easier than writing a letter. And from *SOFT SECTOR*'s standpoint, it's sure an easy way to compile and report advertising results.

Greg Crouch
Mishawaka, IN

Editor's Note: We intend to feature articles on telecommunications in upcoming issues. As for reader service cards, you hit the nail on the head: extremely slow response is their main drawback.

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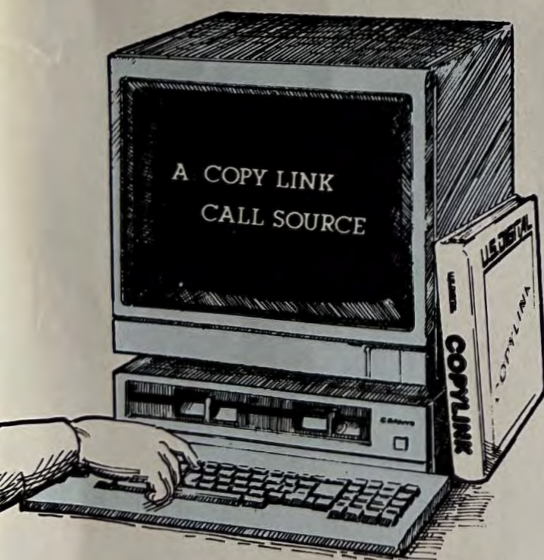
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